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AMERICAN
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AMERICAN VETERINARY REVIEW.

AUGUST, 1908.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, June 15, 1908.

RHINITIS OF DOGS AND ITS COMPLICATIONS.—Prof. G. Hebrant and his adjunct Hermann have pubished in the Annales of Belgium an article on *Rhinitis of dogs and its complications,* which is quite interesting.

They say: If vulgar rhinitis may be considered as a benignant disease, when it occurs in our large domestic animals, this condition is not always the same when it is observed in individuals of smaller species, and especially in dogs, where it may prove quite serious in those where the nose is short and in which the configuration of the nasal cavities, the great vascularity of its mucous membrane, the extent of the olfactory portion, the complexity of the meatuses and sinuses, all are, so to speak, predisposing conditions for the development of a diseased process, which also render it of difficult access to any medical interference. There is, indeed, in such animals of the canine species, bulls, pugs, King Charles, etc., a conformation by which rhinitis may become a very serious affection. The etiology and the symptoms of rhinitis are well known. But the treatment often gives very unsatisfactory results. Indeed in some cases, rhinitis may give rise to complications of asthma, in those animals whose nose is very short. Asthma is manifested by loud breathing, occurring by spells, when the dog is walking or after a series of sneezes, more or less frequent. The poor little fellow stops moving, with both fore legs spread apart; he has a roaring inspiration; his diaphragm contracts spasmodically and his ribs are raised on

their upper extremity. The attack lasts but a few seconds and soon the animal anxious and distressed is more or less threatened with asphyxia. Soon, however, the normal condition reappears until another attack comes to add to his misery. Against this frequent and very rebellious condition, Profs. Hebrant and Hermann recommend, when the attack comes on, inhalation of chloride of ethyl, nitrite of amyl, chloroform or spirits of turpentine. If the spells are too frequent they advise sub-cutaneous injections of morphine or chloral by ingestion.

* * *

But there is another complication of rhinitis in dogs far more serious and which presents much analogy to ozena of man. A case is reported by these eminent observers which shows it. A little stable skye terrier had a bilateral muco-purulent nasal discharge which was adherent to the edges of both nostrils. As there were no other apparent lesions, fumigations of vegetal tar were only prescribed. But the discharge increased, and soon epistaxis took place after each inhalation. Fumigations of hay tea were ordered, the discharge kept increasing and became fœtid. In the meanwhile there appeared ocular troubles. Conjunctivitis and keratitis with ulcerations of the cornea, which was accompanied with escape of the aqueous humor and formation of a staphyloma. The right eye followed and became also affected, while the discharge seemed to be reduced on the left side. Sprays of tincture of iodine were resorted to in the nasal cavities, but without improvement and finally the poor blind sufferer was killed. In making a post-mortem examination, it was found that most of the septum nasi was destroyed. In the left nasal cavity there was a mass of putrid remains of the destroyed turbinated bones and of the ethmoidal volute. The nasal bone, the nasal portion of the maxillary were more or less necrosed and the mucous membrane was entirely destroyed. The left frontal sinus was full of mucosities and of gangrenous small pieces of bones. It communicated with the left sinus and even the walls of the orbital cavity were involved and diseased. The

lacrymal bone, the palate, frontal and superior maxillary were also involved. The lesions on the right side were more localized and attacked the mucous membrane principally. With such lesions, one can appreciate that no treatment could be followed by good results. Free trephining might have been tried; but perhaps the result would not have been any better. And all had started with an apparent plain attack of simple rhinitis.

* * *

SPIROCHÆTOSIS OF FOWLS.—The REVIEW some months ago, in September, 1907, extracted from the *Transvaal Agricultural Journal* a few remarks in relation to two ticks, of which illustrations were also reproduced. To the presence of these, the original author, Mr. Howard, Acting Entomologist to the Transvaal Government, attributed the death of fowls which had died in great number and where evidently the death was due to the loss of blood sucked from them by the ticks. But Mr. Howard added that it was thought that the ticks might also transmit some infectious diseases to fowls under certain circumstances, but that this was not common and that no absolute proofs of it existed.

Under the heading of "Spirochætosis of Fowls in Southern Rhodesia," the *Journal of Comparative Pathology and Therapeutics* prints an article from Ll. E. W. Bevan, M. R. C. V. S., Government Veterinary Surgeon, which shows that the last supposition of Howard was correct, "in the fact that these ticks are capable of introducing a special organism, namely, a spirochæte into the body of its host, giving rise to a septicæmia, which is an important, if not the principal, factor in the death of the fowl. When a little blood from a sick fowl is injected under the skin of a healthy bird, spirochætes are found in the blood of the inoculated bird on the second day, increasing in number until the third day and then disappearing." Mr. Bevan then gives the symptoms, lesions observed in an outbreak which he considered as a typical example with the treatment resorted. I briefly résumé them.

Symptoms—Birds apparently healthy over night are found dead in the morning. In less acute cases birds are dull and mope,

with muffled feathers. There is loss of power in the limbs, wings are drooping, the birds are lame, squat about or are unable to rise. There is great thirst. Animals drink until they cannot hold any more. Diarrhea is abundant. Perhaps there is loss of appetite or again the bird eats to the time of death. Towards the end the bird lies with eyes closed and his head on the ground.

Lesions—There are those of severe anæmia. The place of attachment of each larval tick has an hemorrhagic area. In some cases where ticks were plenty, no blood remained in the carcasses. In others where ticks were few and no signs of loss of blood existed there were lesions pointing to septicæmia.

Preventive Measures—Strictly hygienic indications. Isolation of the new birds, destruction of infected coops, cleaning of fowl-runs, white-washing and general measures of disinfection and cleanliness.

Medical treatment—As soon as it is evident that a spirochæte is responsible for the death of the tick-infected fowls, quinine, methyl-arsenite of soda and atoxil have been tried. This last is the one that has seemed to give most satisfactory results.

As these ticks are frequently observed all over the world, it is probable that fowls can be infected in a similar way and that some of our readers may find some interest in the above concise remarks.

* * *

INTRA-PERITONEAL INJECTIONS OF CHLORAL.—On previous occasions I have alluded to the various applications that were carried on here with chloral, when used in the peritoneal intra-peritoneal injections, and I referred principally to those that Professor Sandrail, of Toulouse, made to obtain general anæsthesia on subjects which were used in the classes of practical operative surgery. Since that time two communications have been presented to the Société Centrale, where the use of chloral for similar purposes is extensively considered. These papers were the object of a prize for the authors. But it is not

only as a means for general anæsthesia that the use of chloral seems to recommend itself. There are indications which our American veterinarians have for a number of years taken advantage of, namely, in the treatment of colics. It is unnecessary to say how we in America administer it. A bolus is made, thrown in the patient's throat, and in a short time the effect is manifest. The patent is asleep.

But it is not every one who can give a bolus. Americans excel in that way of administering medicines. I believe many veterinarians in England do also. I am not sure about the Germans. But I am positive the French do not. And if some do they dare not ask a stable nurse to do it for them. It is then that one of the great advantages that can be obtained by the use of chloral must be lost, bearing in mind that its administration in drenches, is certainly a difficult and possibly a dangerous operation.

The results that have been obtained by Mr. Breton, late adjunct to the chair of surgery at the school of Alfort, seem to show that administered in intra-peritoneal injections in cases of severe attacks of colics, most satisfactory results have been obtained by him.

Indeed, recalling the effects of chloral injected directly in the peritoneum by others, the thoughts came to Mr. Breton to resort to that way so as to relieve the violent manifestations observed in cases of colics. He experimented in various ways and finally adopted the following: An isotonic solution of chloride of sodium and chloral is prepared, viz., with 7 grammes of chloride, 100 of chloral and 1 litre of sterilized distilled water. Isotonic solutions are always supported better by the tissues. Cells are not altered, and local complications are less frequent and less dangerous. The solution is held in an apparatus used to make injections of physiological serum. The trocar used for bleeding is employed. This is pushed perpendicularly through the skin, as in cases of enterotomy, and the liquid is slowly injected, passing directly in the peritoneum.

With this method Mr. Breton has injected chloral 78 times in cases of severe colics and in only one has the operation proved fatal. There had been introduction of the liquid between the peritoneum and the layers of muscles, extensive necrosis and an enormous abscess followed. "Always," says Mr. Breton, "anæsthesia is rapidly obtained. After a few minutes the patient is in a deep sleep and to the violent pains of the colics succeeds a complete quietness which lasts four, five, six, seven hours and even more and permitting without difficulty whatever treatment is indicated. Intra-peritoneal injections are absolutely harmless and it is the best method to resort to on account of the rapidity and certainty of the narcosis."

It is certainly a more professional way to administer the drug, but I fancy that for many hand-balling will still remain the most practical.

* * *

VETERINARY DIRECTORIES.—In the June number of our thirty-first volume I had the great pleasure of calling the attention of our readers to an excellent little booklet, the directory of the Veterinary Surgeons of Pennsylvania, due to the exertions of Dr. W. H. Hoskins, the secretary of the State Board of Examiners. In my remarks, besides giving our esteemed colleague all the credit that he deserved, I suggested the idea that a similar work and a like publication might be issued by our numerous states, so as to have the full statement of our professional representation. It might not be essential that new editions should be published very often—once every five years, for instance, might do. Possibly some little addition could be introduced, among which I take the liberty to suggest the date of graduation, the official special work done, the connection with sanitary service or in schools, etc. Of course, this would involve extra expense, but if instead of being gratuitously given away they were disposed of at a trifling price, perhaps this expense could be reduced to a minimum.

I have been reminded of this by looking over an old announcement of the A. V. C., where something like what I suggest was done. In fact, in some countries of Europe the same is already done. It is far from my mind to recommend these additions because of their existing in some similar works of old Europe. But never mind, the idea seemed to me practicable and advantageous.

By the way, in glancing over one which is published yearly here in connection with a daily visiting book and that almost every veterinarian purchases and uses, I found lately material for a queer statistic. Perhaps it may interest some of our readers. Taking into consideration the number of graduates from the three veterinary schools on January, 1908, as registered in this diary, I found that there are 2,980 altogether, of which 2,513 are in civil practice and 467 are in the army. I had the idea to search how old some of those 2,513 were, taking for average that they had graduated only at 21 years of age, and counting them still alive in 1908. The statistic reads as follows:

There remain	Who graduated in	And are now	There remain	Who graduated in	And are now
18	1859	70 years old.	4	1848	81 years old.
16	1858	71 " "	6	1847	82 " "
10	1857	72 " "	12	1846	83 " "
16	1856	73 " "	6	1845	84 " "
16	1855	74 " "	4	1844	85 " "
12	1854	75 " "	2	1843	86 " "
17	1853	76 " "	3	1841	88 " "
10	1852	77 " "	3	1840	89 " "
6	1851	78 " "	1	1839	90 " "
12	1850	79 " "	1	1838	91 " "
1	1849	80 " "			

Making altogether 176 who are beyond 70 years old. Of those there are recorded only 31 who are said not to be in practice any more. Supposing that those 31 are the oldest, it yet

would mean that there are some who are practising, although they are 82, 81 years or less, say, down to the seventies. I leave to others the task to make conclusions in relation to such wonderful love to still practice, as exhibited by those venerables.

* * *

BIBLIOGRAPHY.—Dr. N. Lanzilloti-Buonsanti is completing his "Trattato di Tecnica e Terapeutica Chirurgica Degli Animali Domestici" (Treatise of Technic and Therapeutic Surgery of the Domestic Animals), by the publication of the first section of the third and last volume, which is devoted to the surgery of the extremities.

This first section is composed of two fasciculæ, illustrated by numerous plates, many of which are photographic reproductions. The author has followed the original plan of the two first volumes. The anatomy of the extremities is concisely considered and while it covers but a few pages it forms a very interesting vade mecum on the subject. The physiology is much more extensively treated and the illustrations are of much assistance in the studies of the different changes and modifications and problems pertaining to locomotion. The chapter on generalities of lameness, their classification, the diagnosis and the various ways to reach it, with the many illustrations that are presented, bring us to the chapter IX., which began the consideration of the diseases of the extremities and their symptoms. In this part there is a peculiar arrangement, which I consider a very valuable innovation. While the diseases and lesions are considered according as they are met with in the various systems, cutaneous, muscular, bony, nervous, etc., merely the important and specific symptoms are given, and that in a kind of simple, concise exposé, which permits the reader to at once and without great searching find the part which interests him.

In these two fasciculæ one can judge what the entire volume will be and when it is completed the entire work will, no doubt, prove of general usefulness and reference in the veterinary world.

* * *

A short time ago I was making allusion to the work of our friend Dr. Knowles on artificial fecundation. Lately my attention was called in the REVIEW to an article from our worthy collaborator, Dr. Gribble, and just now I receive a little work from a veterinarian, Mr. Ed. Curot, of whom I have already had occasion to speak in these pages when his book on the "Use of Sugar in Food to Animals" was issued.

To-day the new book is entitled *Fécondation et Stérilité.* I am quite sure many of our friends will read it. It is a part of the "Encyclopedie de l'Agriculture," sold by C. Amat, 11 rue de Mézieres in Paris. It forms one volume in twelve of nearly 300 pages, where the author has undertaken to study the means of reducing the large percentage of losses that sterility imposed upon breeders. The various and numerous causes of sterility in males and in females are carefully considered, the possibility of a positive diagnosis is exposed and a rational preventive and curative treatment indicated. The last part of the work relates to artificial fecundation and concise mention is made of what has been done in America in that direction. It is a very instructive and interesting volume.

* * *

In conclusion, I am pleased to acknowledge the receipt of the following: The Twenty-third Annual Report of the Bureau of Animal Industry for 1906; the No. 3, Vol. XIII., of the Archives of Biological Sciences, published by the Imperial Institute of Experimental Medicine at St. Petersburg; Bulletin 250 from Cornell University Agricultural Experimental Station on Bovine Tuberculosis, and one on the Dissemination and Control of Tuberculosis, as illustrated in the bovine species, both by Dr. V. A. Moore; a pamphlet on Meat and Milk Hygiene, by Dr. W. H. Dalrymple, M. R. C. V. S.; finally, the Journal of the Alumni Association of McKillip Veterinary College and the announcement of the San Francisco Veterinary College of 1908-1909.

* * *

EUROPEAN ITEMS OF VETERINARY INTEREST.—I will close this month with a little journey among the items of veterinary interest on the continent as I find them in professional journals.

In Belgium—The Société of Veterinary Medicine of Antwerp has decided to publish a bulletin, a kind of journal which will give reports of the meetings, a professional chronicle, original articles, etc. It will be published in the French and Flemish languages.

In Holland —Dr. D. A. de Jong, director of the Abattoir of Leyden, general secretary of the Ninth International Veterinary Congress, has been appointed professor of comparative pathology at the University of Leyden.

In Austria—Since a long time Austrian veterinary students are clamoring for reforms in the veterinary schools and especially asking the transfer of the school from the Secretary of War's jurisdiction to that of the Secretary of Public Instruction. Their claims remaining ignored, they revolted, were turned out of the school and then made great manifestations before the Parliament and the University.

In Germany—At the school of Munich Prof. Dr. Joseph Mayr is appointed to the chair of surgery and history of medicine. He is also placed at the direction of the surgical clinics for small and large animals.

Baden-Baden—The permanent Commission of International Veterinary Congresses met in that town in April last, under the presidency of Dr. Lydtin. Delegates from England, from the Cape and from Denmark only were present. M. M. Binder, of Vienna, and Leclainche, of Toulouse, were selected to prepare an international form of declaration of contagious diseases. The Commission then prepared the order of the day for the next congress, which will be held between the 14th and 19th of September, 1909. Fifty questions had been proposed, but ten of general interest were retained. The reports will be printed in three languages, as was adopted on a previous occasion and will be distributed as soon as possible.

At Dresden—A laboratory is to be established at the veterinary school for the study of "Opsonins," the soluble substances contained in normal sera or in specific immune sera and which act in phagocytosis to increase it and render it more efficacious. The knowledge of those substances, or better, of the opsonizing properties of sera, is utilized in the treatment of infectious diseases by the method of Wright, of London, which consists in injecting under the skin, at repeated times, emulsions of cultures of the proper lesions of a patient, first sterilized by heat.

A. L.

THE GOVERNMENT STANDARD FOR VETERINARY COLLEGES.

The last report of the Committee on Intelligence and Education, A. V. M. A., presented at Kansas City in 1907, by Dr. Leonard Pearson, chairman, gives a comprehensive outline of the organization, equipment and budget considered necessary for a veterinary school to possess in order to teach the veterinary sciences in an adequate manner in a way that is proportionate to the needs of the country and in harmony with the development of modern technical and professional schools.

Such a school, according to the committee's report, would require a $350,000 equipment with an annual budget of $75,000 to teach from 200 to 300 students; the standard for students entering upon their professional studies to be on a plane with that required for medicine, law, engineering, agriculture, etc., viz., four years of successful high school; the duration of the course of veterinary instruction to be four years of nine months each. Such in brief is the standard of attainment set by the A. V. M. A. for those veterinary schools which are to take high rank in America.

It is well for the profession to set a high standard for veterinary schools. The REVIEW stands for higher education. It also recognizes the fact that we must first meet conditions as they

exist in this country at the present time before we can expect to attain our ideals. We are of opinion that the expert committee appointed by the Secretary of Agriculture to investigate the schools and recommend a standard for matriculation, course of instruction, etc., to be maintained in order for their graduates to be eligible to take the United States Civil Service examinations for appointment in the government service has done splendid work and has acted wisely in establishing at this time a minimum standard which is in the reach of every school in the land. Its recommendations are reasonable and practical and well adapted to meet present needs and conditions. True, a few of the schools are far in advance of the Government demands, yet on the other hand there are more that the new requirements will bring up to a higher plane and thereby elevate the profession as a whole. Several of the schools are not going to take advantage of the time allowed but propose to meet the Government requirements at once.

The colleges are classified on the basis of the courses of instruction they are giving. Class A consists of those colleges whose graduates are recommended as eligible to the U. S. Civil Service examinations for Veterinary Inspector in the Bureau of Animal Industry. Class B consists of those colleges whose graduates have been allowed to take the Civil Service examinations subsequent to 1898, but are not recommended. Class C are the colleges whose recent graduates are not eligible to take the Civil Service examinations and are not recommended.

The matriculation requirements are equivalent to the second grade examination as published by the U. S. Civil Service Manual of Examinations, supplemented by United States history and geography of the United States and its possessions; the course in veterinary medicine covers a period of three years of not less than six months in each year, exclusive of final examinations and holidays.

Elsewhere in this issue of the REVIEW we print the full text of the Government report and recommendations, issued July 6,

1908, which we commend to the careful consideration of our readers. Matriculation requirements, schedule of instruction, length of course, grading of course, constitution of faculty and qualifications of instructors, classification of veterinary colleges and requirements for graduation are among the subjects that the committee make recommendations upon, all of which have been approved by the Secretary of Agriculture and will become operative for each institution not later than the close of the college year 1908-9.

No college in Class A can give credit to any student for any work done at colleges in classes B and C. By referring to recommendation No. 27 of the Government report it will be observed that the wording of the recommendation permits the schools in Class A to commence enforcing the regulations at any time after the issue of the circular. In order to prevent students at present registered in colleges in classes B and C from deserting these colleges and joining colleges in Class A, it has been decided that the colleges in the latter class shall immediately respect and enforce the regulations in this respect. As a consequence graduates or students of colleges in classes B and C are ineligible to enter colleges in Class A.

The influence of the action of the Government will certainly be of great value to the profession at large, and the REVIEW is of opinion that it will prove a potent factor in bringing about a decided advance in veterinary education.

The Government report ought to make the coming meeting of the Association of Faculties and Examining Boards one of considerable interest and much importance to the membership of the A. V. M. A. We are looking forward to the discussion that will arise then with more than passing interest.

It is evident that largely increased funds are needed if veterinary colleges are to maintain a high standard. Some states have appropriated money for veterinary education and small appropriations of the federal funds donated to land-grant colleges have in some instances been used to support a limited amount of

veterinary work, but aside from this the federal government has done nothing directly for veterinary education.

Now, that the Government has officially recognized the value and importance of veterinary education to the nation, and has taken measures to elevate the standard of such education in the interest of the administration of the Department of Agriculture, an appeal should be made to Congress for an appropriation sufficient to place veterinary education in this country upon a substantial basis, as it has done for agricultural education. The advancement of agriculture as well as the prosperity and health of the people depend, in no small degree, upon the intelligent application of the veterinary sciences to the needs of the country.

GOOD NEWS FROM LOUISIANA.

Reforms are slow of accomplishment where their importance is neither fully realized nor appreciated, but with well-directed and persistent effort they can usually be brought about, although often discouragingly slow.

Twenty years ago a graduate in veterinary medicine in Louisiana, as in most other sections of our vast domain, was nothing short of a curiosity. The past twenty years, however, have witnessed wonderful changes in things veterinary, and those changes have been for the uplifting and upbuilding of the veterinary profession, and for the benefit of livestock husbandry, for which the state of Louisiana is so well adapted.

The REVIEW is delighted to be able to announce to the profession at large that the General Assembly of the state of Louisiana has just passed a law regulating the practice of veterinary medicine and surgery in that commonwealth, and at the same time has created a board of veterinary medical examiners to pass upon the fitness of graduates who propose entering the state to engage in practice. For the passage of this bill, Dr. Dalrymple gallantly gives the credit to Dr. J. Arthur Goodwin, of New

Iberia, La., a member of the A. V. M. A., who not only drew the bill up, but worked untiringly for it among the members of the Legislature, and spoke for it before the different committees to which it had been referred.

This is not all. A live stock sanitary bill had been introduced in the Louisiana State Legislature, at each biennial session, since 1902. The persistence with which the measure was introduced, which was with as much regularity as the legislative session itself, is said to have got it into disfavor with the Senate Committee to which it had always been referred. "Nil desperandum," however, was the motto of Louisiana's loyal veterinarians and the reader can imagine the supreme pleasure of Dr. Dalrymple as he stood in the Senate Chamber and heard the result of the vote which made the live stock sanitary bill a law, which is the satisfactory result of quite a number of years' discouragement, blended with a modicum of hope and determination.

The personnel of the Board, when organized, will be the State Commissioner of Agriculture and Immigration as ex-officio chairman, the Professor of Veterinary Medicine in the Louisiana State University and A. & M. College; the Entomologist of the State Experiment Stations, and two citizen stockmen who shall be financially interested in the breeding and raising of live stock, and who shall be appointed by the Governor. The Secretary and Executive Officer of the Board shall be a member of the veterinary profession who is a graduate of a reputable and recognized veterinary college.

The reason for the Experiment Station Entomologist being on the Board is on account of the law embracing the work of tick-eradication in the state, and the fact that this work has been, and will continue to be for the next two years, in the hands of the Louisiana State Crop Pest Commission, which is an entomological department, and the secretary of this commission, who is also entomologist of the Stations, having had considerable experience along this line.

Unfortunately, the live stock sanitary bill had to be introduced, at this time, without an appropriation, otherwise it would have been lost. However, it was a consideration to have it enacted into law, and placed upon the statute books, and it is expected that the next General Assembly will see fit to appropriate the necessary funds for the effective carrying out of its provisions. "Half a loaf is better than no bread" these times, and especially in a section of the country where the importance of such legislation is not, even yet, fully realized.

It will be seen, therefore, that, with a reorganized state veterinary medical association for the mutual benefit, educationally and otherwise, of the members of the profession in the state, with a law regulating the practice of veterinary medicine and surgery for the protection of the public from unqualified practitioners, and with a live stock sanitary law to afford protection to stockowners against the introduction and spread of the fatal microbic diseases to which animals are susceptible, Louisiana is striding onward and upward and getting into line with her progressive sister states; all of which, we feel sure, will be received as good news by the profession throughout the length and breadth of the land.

Congratulations to the people of Louisiana and congratulations to Dr. Dalrymple and his co-workers.

THE NEW DIRECTOR OF THE NEW YORK STATE VETERINARY COLLEGE.

The technical training in pathology and bacteriology of Dr. Veranus Alva Moore, whose portrait adorns this issue of the REVIEW, and the far-reaching value to comparative medical science of his research work and the broad scope for its application in human and animal medicine have long been recognized and appreciated by the veterinary profession.

His early work in the laboratory of the Bureau of Animal Industry at Washington under Drs. D. E. Salmon and Theobald

Smith, and his own work in said Bureau, as chief of the Division of Animal Pathology, after Dr. Smith's resignation to accept a professorship in Harvard University; his subsequent work at Cornell University as a member of the Veterinary Faculty; his researches in the field of comparative pathology and bacteriology; his brilliant contributions to comparative medical science and enrichment of its literature, and the practical value of his services to the State of New York as a scientific expert in the control of serious outbreaks of infectious diseases of animals, contribute in no small degree, to make Dr. Moore a worthy successor to the venerable veterinary scholar and educator, Professor James Law, who is now retired from the directorship under the Carnegie foundation after a long and notable career.

In addition to his duties of administration, Dr. Moore retains his own chair of Comparative Pathology, Bacteriology and Meat Inspection, while a young man of university training, and some experience in practice, has been appointed Acting Professor to occupy Dr. Law's chair of Veterinary Medicine. This gentleman is Dr. D. H. Udall, a graduate of the University of Vermont, and also of the N. Y. S. V. C., class 1901. For the past five years Dr. Udall has been teaching in the Veterinary Department of the Ohio State University, and last spring he was made full Professor of Veterinary Medicine in that institution. Dr. Udall will spend some time in Europe studying clinical veterinary medicine. The work in medicine will meantime be strengthened by several short courses on special subjects given by distinguished members of the profession.

It is the new Director's purpose to bring up the practical end of the college to as high a level as possible. Besides lectures on special topics by those most experienced, arrangements for a considerable addition to the clinical facilities have been made. Since the enforcement of the higher requirements for entrance the college is obtaining a very fine class of men who will do the profession honor and the agricultural and public health interests of the country great good. The wonderful advances in scientific

veterinary medicine require to meet the demands of to-day men of good education and thorough technical training. It is confidently expected that the Department of Medicine will be maintained at a high standard and that soon the best methods afforded by European veterinary colleges for teaching both theoretical and clinical medicine will be employed.

Among other prominent pathologists, Dr. Moore was engaged in extensive investigations as an expert in the now famed Smelter Smoke Suit in the Deer Lodge Valley, Montana, in 1906 and 1907. He served as a member of the commission appointed by the Secretary of Agriculture to revise the meat inspection rules and regulations of the Bureau of Animal Industry in 1907. He is active in the work of the American Veterinary Medical Association, being chairman of the Committee on Diseases, and is deeply interested in the work of the International Congress on Tuberculosis. The new Director's writings are all of a technical character and are of much scientific and practical value. The third edition of his "The Pathology and Differential Diagnosis of Infectious Diseases of Animals," is now in press. The new edition will be welcomed and appreciated by the profession. Dr. Moore is a valued collaborator of the AMERICAN VETERINARY REVIEW.

Dr. Moore's appointment is a well-deserved one. In view of the character of the work he has done, the REVIEW confidently believes that his thought and labors will be for the further advancement of veterinary education and the welfare of the profession in general.

OUR DISTINGUISHED GUESTS.

Many of our members contemplate attending both meetings—the A. V. M. A. at Philadelphia and the International Congress on Tuberculosis at Washington—but to those who can only spare the time to attend one meeting we would strongly advise them to attend the Philadelphia meeting.

In the first place it is a courtesy we owe to the distinguished foreigners who honor us with their presence at the A. V. M. A. convention. It is a rare privilege indeed to have the opportunity to personally meet these noted investigators and writers from abroad. We believe this will be more appreciated by many than the listening to the reading of learned papers in a foreign tongue, especially as the papers are to be published in three different languages and will be available to peruse at home. Men are saying that they would like to meet or at least to see Dr. Bang and Dr. Ostertag, and others. It will be something to them even to have seen these men.

Another thing, as yet no word has been received from any channel indicating what the program of the veterinary division of the Washington meeting will contain. This lack of information and in the presence of definite knowledge that we will have a good program at Philadelphia should impress itself upon our membership.

If possible attend both meetings. If, however, you can be present only at one attend the Philadelphia meeting.

It affords us pleasure to present elsewhere in our pages the program of the A. V. M. A. meeting, together with the names of officers, committees, portraits of officers, view of the Headquarters, A. V. M. A., and also a view of Houston Hall, University of Pennsylvania, where the sessions will be held. Information as to transportation and the social features, so far as arranged, are also included in the account.

At the present writing every sign points to the largest gathering and the most successful meeting of its kind ever held in America if not in the world.

LOCO-WEED POISONING AND BARIUM SALTS.

If it were not for the fact that the full report of Crawford's investigation of loco-weed poisoning, and his brilliant discovery showing that it is the inorganic constituents, especially barium,

which are responsible for its poisonous action upon horses and cattle, previously referred to in the REVIEW, has been published in a bulletin issued by the Government Bureau of Plant Industry, which is available to all those interested, we would give space in our pages to the investigator's entire paper on account of the importance of the contribution to toxicology and pharmacology and to the inestimable value of the discovery in the practice of medicine.

We feel, however, that the subject is of sufficient general interest to all our readers, to warrant us in publishing a comprehensive synopsis of the principal points brought out in the investigation. This we do in this issue. The résumé has been carefully prepared by our able collaborator, Dr. D. Arthur Hughes, which may be found elsewhere under the head of "Correspondence."

FATALITIES from sunstroke and prostration among workhorses in New York, during the recent hot spell, are said to surpass all records except it be that of the summer of 1896 when more than 1,200 equine toilers succumbed in the metropolis in one week.

A LITERARY GEM.—The following resolution was adopted by the Board of Aldermen on Tuesday, July 21, and appeared in *The City Record*, the official organ of The City of New York:

"*Resolved*, That permission be and the same is hereby given to Reiner & Wolff to temporarily occupy, during intervals between absences, for the convenience of the public, and with the full concurrence of the landlord and occupant of the premises known as No. 71 Sheriff street, in the Borough of Manhattan, with a furniture van, at the corner of Sheriff and Rivington streets, in front of the aforesaid No. 71 Sheriff street, in the aforesaid Borough of Manhattan, provided that such space temporarily occupied be kept absolutely clean, free and clear of equine disjecta, or refuse of any kind whatsoever, under the supervision of the President of the Borough; such permission to continue only during the pleasure of the Board of Aldermen.

"Which was adopted."

Now it's up to the President of the Borough of Manhattan.

ORIGINAL ARTICLES.

THE RESTRAINT OF ANIMALS BY AID OF CHLORAL HYDRATE.

By F. F. Brown, D. V. S., Kansas City, Mo.

A paper read before the annual meeting of the Missouri Valley Veterinary Association at Omaha, Nebraska, 1908.

The restraint of animals is one of the important problems associated with the practice of medicine, and one that daily calls for solution at the hands of the busy practitioner.

Restraint is the preliminary step to nearly all surgical operations and the success of surgical undertakings is largely measured by the effectiveness with which the animal is confined. Imperfect restrain not only detracts from the skillful use of the knife, but increases the opportunity for infection of the surgical field, so that the unfortunate terminations of many surgical cases, many times can be traced to not properly limiting the struggles of the animal.

Confinement of animals is made with three objects in view:

First—To restrain the animal that it may not do itself bodily injury or harm.

Second—To limit the jeopardy of life and limb of operator and assistants.

Third—The primary object of restraint—to secure the animal in such a manner that the operation may be carefully, effectively and scientifically performed.

Fear of injury or pain prompts resistance on the part of animals, which resistance must be anticipated by the surgeon and met with measures of confinement commensurate with the operation in hand. If the medical attention or operation is one of a minor nature, oftentimes efforts directed towards inspiring confidence on the part of the animal in the one in charge will

suffice. Kindness and firmness, combined with patience, go a long way in subjugating the will of the brute world to that of man.

The peculiar disposition of certain animals or nature of certain operations renders moral suasion wholly impracticable in some instances, and force is frequently an added agency in the problem of control.

As man becomes familiar with the habits and temperaments of animals he learns to take advantage of their lesser intelligence and by means of little devices is enabled to place at great disadvantage his many times more powerful associate.

Even when the horse is cast by means of harness or placed upon a table especially devised for that purpose, the restraint is at best an imperfect one, and does not give the surgeon the opportunity to display the highest type of surgical skill.

The resistance of animals may be further limited by resorting to those methods that will interfere with the transmission of painful impulses, viz., intensely cold applications, compression and medicinal agents, which latter may be inserted about the sensory nerve endings or along the lines of the sensory nerve trunk.

Those measures that will make less painful a surgical operation are to be highly commended, and it should be the aim and determination of the veterinarian to aspire to the same degree of proficiency in this respect as the surgeon of the human kind —the avoidance at all times of needless pain in the lower animals.

Local anæsthesia serves it purpose when properly applied in many instances and should come into more general use. In certain selected cases when properly applied its results are perfect. The field of veterinary surgery is too broad, however, to be entirely met by local anæsthesia, as there are cases that arise in which the operation would prove too painful or too extensive to admit of any method short of anæsthesia in its general sense.

The selection of a suitable agent that will safely reduce the animal to a state of total unconsciousness is a puzzling question. Of the many agents that may be employed nearly all have some objectionable quality. These objections range all the way from the ineffective, delirium-producing kind to those that intoxicate and kill by respiratory or cardiac arrest.

Chloral hydrate has for years held a high place as a reliable hypnotic. Perhaps no one agent is as generally used for holding in abeyance nervous and painful conditions. This it accomplishes so frequently when the patient is at all susceptible to agents of this class that it is rare for some other drug to supplant it and give better results when it fails on a given case.

As usually employed it is given per orem, but may be given per rectum intravenously and intraperitoneally. Its use subcutaneously or intratracheally is not permissible on account of its irritating properties, and if it be diluted to a point to overcome this, the bulk of the injection would be too great to be practical.

When one or two ounces are given either in drench or capsule per orem the patient in the course of an hour usually exhibits extreme dullness or occasionally passes into a state of anæsthesia. Its action when given in this manner is uncertain, which is perhaps largely due to becoming mixed with quantities of ingesta and thus delaying absorption. The majority of surgical cases call for a more prompt and certain action than usually can be obtained from oral administration.

Rectal injections encounter the difficulty of the animal's making repeated and persistent attempts to evacuate the bowel, which is prompted by the local irritation of the agent, and for this reason this method is not ordinarily satisfactory.

The intravenous injection of chloral hydrate is attended by very prompt results. In a very few seconds after one to one and one-half ounces in solution are injected in this manner, the animal becomes completely unconscious.

This latter is the method resorted to at the Kansas City Veterinary College on dissecting subjects and cases for surgical practice. In the latter instance animals are kept anæsthetized

from three to five hours, and as the effect of the chloral passes off it is occasionally found necessary to supplement it with inhalations of chloroform.

The writer has never had the opportunity to observe the after-effect on a great number of patients in which chloral was employed in this manner, but from what can be learned (and the investigation has extended to about fifteen cases) it would seem that no harmful effect follows so far as injury to the blood or intima of the vessels is concerned.

The chief danger lies in the possibility of unconsciously permitting the needle to be withdrawn from the vein and discharge some of the solution into the tissues. Following such an accident abscesses are apt to occur, together with phlebitis, infection and death of the patient.

The attention of the veterinary profession rather recently has been attracted to the feasibility of producing anæsthesia in animals with hydrated chloral by injecting a solution of the same into the peritoneal cavity. This method, while practiced by the human surgeon in certain isolated cases, is considered entirely too dangerous a procedure for general practice on account of the irritating properties of the drug, and has been abandoned. In the horse, from one and one-half to two ounces is used, which is dissolved in from ten to fifteen times as much distilled water and injected at body temperature, preferably through the left flank. The animal should be as carefully prepared previous to the operation as it would have been were any other general anæsthetic to be administered, with the added care that everything used pertaining to the injection is first sterilized and rendered free from germ life.

In a few minutes following the introduction of the agent the animal will show slight restlessness, which is quickly followed by stupor, inability to maintain its equilibrium, and in from five to ten minutes goes to the ground where it quickly lapses into a state of anæsthesia, oftentimes so complete that the most serious operation may be undertaken without exciting any of the reflexes.

The period of anæsthesia usually continues a sufficient length of time for the most extensive major operation to be performed, at the end of which time, ordinarily from one to two hours, the animal gradually revives and regains its feet.

When the agent employed is one of superior quality and the injection made in conformity with modern approved surgical ideas, the behavior of the patient is very much as above noted, with no serious sequela so far as the use of chloral is concerned.

There are, however, certain disappointments and after-effects associated with the use of this drug that are worthy of mention and they will be taken up and discussed in order.

First—Intoxication and consequent death of the patient. This sequel from a danger viewpoint might at first be regarded as the most prominent one, but experience does not appear to warrant this conclusion. On the contrary, the data furnished on over one hundred cases in which the intraperitoneal method was practiced does not record the loss of a single subject from intoxication. The conclusions reached, and so often taught, as to the dangers of chloral as an anæsthetic appear to be based largely on experiences in human practice, which is no criterion from which to judge its action on lower animals.

Second—Failure to obtain the physiological action of the drug when given in full dosage. If no action or very little follows the injection of the agent there is practically but one conclusion to be reached, viz., that the trocar entered the large bowel and permitted the fluid to be thrown into its interior where it became so mixed with the contents as to make slow its absorption.

The writer has had the privilege of observing the behavior of a horse within the last few days in which two ounces diluted with twenty onces of water were injected per rectum, the bowel contents first having been carefully removed by hand. No discernible effect whatever was produced by the drug. On the following day the same amount was administered to the same animal intraperitoneally, with the result that the animal was "down and out" in nine minutes and remained perfectly

anæsthetized for a period of nearly two hours. During the period frequent tests were made on many parts of the body to determine the state of the sensory apparatus which was met by no response whatever.

Third—The opportunity to inject the preparation into the muscular tissues or between them and the peritoneum, thus confining the fluid and making conditions favorable for the development of peritonitis. The trocar should be carefully passed until resistance ceases and due allowance made for the condition of the animal and thickness of the abdominal muscles. Bowel odors emanating from the canula point to the fact that the bowel has been punctured, while the resistance offered to blowing through the canula give the hint that the full abdominal wall has not been penetrated.

Fourth—Colicky pains following in the course of from three to five hours. This is perhaps the most frequent sequel to the use of hydrated chloral in the above manner.

Apparently the drug arrests the digestive processes, for it is nothing uncommon for tympany to follow its use. As a rule, this condition is not serious, and I have yet to hear of a loss from colic, although I have known of cases wherein it was necessary to resort to the trocar.

A more strict attention to properly preparing the animal for the anæsthetic will diminish the number of colics following its use, as well as lessen their intensity when they occur.

Fifth and last—Peritonitis.

On account of the well-known irritating properties of chloral hydrate this would be the most likely sequel attending its use. The average physician is loath to believe that a ten per cent. solution of this drug can be injected into the peritoneal cavity of animals with impunity, but there are practitioners who have used it in this manner on many cases without any apparent symptoms of peritonitis.

Not all veterinarians have been so fortunate. Recently I have the report where one practitioner employed it on three separate cases with a loss from peritonitis of one hundred per cent.

The writer has observed an elevation of from three to four degrees of temperature with corresponding acceleration of pulse and respiration in the course of six or seven hours following its use, but in another twelve hours these disturbances had subsided without medical attention and the animal appeared none the worse for its experience.

The references to no losses at the hands of one practitioner and one hundred per cent. at the hands of another represent the two extremes and the problem is, how are we to harmonize the two reports?

The reports indicate that the quantity used, percentage of dilution and care exercised in administering were approximately the same. Can we look to the chloral hydrate itself as the offending agent? After careful investigation, I am very much inclined to the opinion that herein lies the secret and that while there may be an occasional case of peritonitis develop, yet it appears possible to reduce the losses to a very small per cent.

Chloral hydrate at best is an unstable agent. It undergoes chemical change in the presence of alkalies or organic substances. Likewise it is affected by sunlight, exposure to air and high temperatures, and is especially prone to decompose if permitted to liquefy through exposure or if kept in solution. Many of these alterations result in the formation of substances more irritating than the original drug in its highest state of purity.

It would not be unreasonable to imagine a practitioner, desiring to give chloral a trial via the peritoneal cavity, procuring an article that possibly with seal broken had stood on the druggist's or his own shelf for months, with his experience resulting in the sheerest disappointment.

Until this point has been more thoroughly canvassed by one better versed in organic chemistry than the writer he has this to advise: Use for peritoneal injection hydrated chloral of highest quality only. Procure if possible in two-ounce bottle so as to use fresh each time. If kept in a cool place away from sunlight and administered under the best teachings re-

garding antiseptic precautions to animals properly prepared, the writer believes that the mortalities will largely disappear, and that the use of chloral hydrate intraperitoneally, in major surgical operations, on account of the prompt and perfect control it gives will be regarded as a most safe and sane method of restraining animals.

SOLOMON had 40,000 stalls for horses for his chariots and 12,000 horsemen.

TO THE ODOR BORN.—A Chicago man who was a member of the committee on reception on the occasion of the visit of Prince Albert of Belgium a year or two ago, tells of his highness' inspection of the stockyards.

The prince received every possible attention and was much interested in the magnitude of the industry and the various processes for disposing of the thousands of cattle and hogs slaughtered every day.

Just before he left he turned to the intelligent young man who had been told off to act as his guide and asked:

"Do you never suffer any inconvenience from the odor here?"

"What odor, your highness?" was the naïve response of the young man.—(*Philadelphia Ledger.*)

LICENSED TO PRACTICE IN NEW JERSEY.—The following gentlemen successfully passed the June examinations of the State Board of Veterinary Medical Examiners of New Jersey, have been adjudged duly qualified, and licensed to practice veterinary medicine in that state:

John J. Pardue, V.M.D. (U. of P.), Newark, N. J.

James A. McCloskey, V.M.D. (U. of P.), Chestnut Hill, Philadelphia, Pa.

Edward A. Parker, Jr., V.M.D. (U. of P.), Atlantic City, N. J.

Winfield B. Hobson, V.M.D. (U. of P.), Paterson, N. J.

Alex. M. Mecray, V.M.D. (U. of P.), Moorestown, N. J.

Harold E. Stearns, D.V.S. (N. Y. U.), Arlington, N. J.

William A. Fitzpatrick, M.D.C. (C. V. C.), Mount Holly, N. J.

John H. Bakelaar, M.D.C. (C. V. C.), Passaic, N. J.

Frank T. Burnett, M.D.C. (C. V. C.), Paterson, N. J.

AWAY WITH ANIMAL TUBERCULOSIS.*

That Scourge, Viewed from the Standpoint of the Meat Packer, Stock Raiser and General Public, Must Be Stamped Out.

By D. ARTHUR HUGHES, Ph. D., D. V. M., Inspector, Subsistence Dept., U. S. Army, Chicago.

Those of us who read our daily papers, and our live-stock or agricultural journals, either casually or carefully, will remember very well the bitter quarrel last summer between the meat packers of the country and the live stock commission men. The contest between the two lasted about eight weeks growing hotter as the weeks rolled by, and having the economic effect on the country of scarcity of beef products and soaring prices. The commission men needed the packers as purchasers, especially during that part of the year—the summer season, the time for cattle sales. On the other hand the packers could not be forced to buy on shippers' and commission men's terms, when those terms required the packers to take all risks. Throughout the contest the commission men held that the packers were employing trickery to lessen prices in order that they might buy any quantity of cattle at their own figure, at such a time, later, when farmer and commission man would be forced to sell. The story looked plausible and its plausibility made an excellent blind for their clients—the farmer and shipper. Usually, any argument against the packers has been swallowed by the country without consideration. This time the packers had truth and justice on their side beyond any equivocation. They stated that their object was to stop condemnation losses from tuberculosis and make the careless farmers see the necessity for clearing up their premises. The contest had the striking effect of bringing to the attention of the country at large the losses the packers were sustaining from animal tuberculosis, the rapid increase of the infection, which necessitated that strong measures be taken to halt its progress, or de-

*An address delivered before the Illinois State Veterinary Medical Association.

crease the losses caused by it; and the unsanitary condition in which many localities must be, from which come load after load of animals infected with tuberculosis, to cause the unwary purchaser his heavy losses.

We may well, therefore, in this address, have the fourfold purpose of inquiring: First, the cost of animal tuberculosis to the packer; second, the cost of animal tuberculosis to the stock raiser; third, the cost of animal tuberculosis to the general public or meat consumer; fourth, what suggestions on sanitary measures can be offered in this aggravating situation.

I.—The cost of animal tuberculosis to the meat packer.

If we pay no attention to the animals killed on the farm, we may divide all other domestic animals killed for food in the country into those slaughtered under the United States Inspection and those not. According to the last obtainable annual report of the Bureau of Animal Industry, that for 1905, detailing the United States Inspections for the last year under the old law,* there were 16,956 whole carcasses and 647 parts of carcasses of cattle condemned for tuberculosis, and 64,919 whole carcasses and 142,105 parts of carcasses of swine condemned for the same disease. This is a record against tuberculosis of something like 90 per cent. of all condemnations, and the total loss has been estimated by the packing houses under official supervision to be in the neighborhood of three million dollars annually.

Among the many thousands of men in government inspected houses, of all grades of intellect, there were always many who realized that these losses were unfair to the packers. Among these were the cattle or hog buyers who daily bought fat cattle or hogs for their houses, which were only too quickly condemned for tuberculosis at slaughter. These men, no doubt, keenly felt the injustice when, at the International Live Stock Show, up till recently, before the time it was decided to give prizes to cattle only after the tuberculin test, they bought seemingly prime cattle for the packers only to have them found shockingly tuberculous

* Twenty-second Annual Report B. A. I., p. 26.

at slaughter. These thinking men, also, are the ones who have noted the rapid increase in tuberculosis in cattle and hogs, as shown in condemnation after slaughter or purchase. Dr. A. D. Melvin has informed us† that the percentage of tuberculosis found in cattle where government inspection prevails, has risen from one-fourth of one per cent. in 1905 to one-half of one per cent. in 1907; or, the amount found has doubled. In hogs the amount found is far worse—about four times as much. Inasmuch as the custom has been to hoodwink the unwary packers by selling them all these diseased animals, is there any wonder that they cry out at the injustice? In other words, with the increase of tuberculosis among their purchases comes a greater and greater condemnation loss. The ever-increasing tuberculosis meant an ever-increasing loss, by condemnation for grease or offal of either the whole or part of each carcass found infected. The bill was bound to increase if they did not make a stand against the disease. They stood for a "square deal."

II.—The cost of animal tuberculosis to the stock raiser.

The results of post-mortem inspection in the houses under government control and the cost of tuberculosis to the packers are an index to what is occurring on the farms from which such infected animals come. There can be no reasonable dispute of the statement that the bill for tuberculosis against the packers should be the bill for tuberculosis against the stock raisers, whomsoever they may be. We may take the statement for granted that this bill belongs to them, and that eventually they will be forced to foot it.

However, the figures emanating from the reports of inspection in official abattoirs really represent a small part of the cost of animal tuberculosis to the stock raiser. Under the new federal law, with the extension of government inspection to scores of smaller houses, we have been enabled to further study how widespread the disease is, as evinced by the number of carcasses found

†American Veterinary Review, November, 1907, pp. 206-207.

tuberculous during the inspections. Furthermore, the passage of the new federal law has stimulated the passage of state meat inspection laws and municipal regulations. There are thousands of houses doing only a state business, or a merely municipal business, the records of which do not enter into our computation of the extent of tuberculosis among farm animals. A compilation of these facts would add more weight to the argument against tuberculosis. The federal reports show that about thirty millions of cattle and hogs are killed under federal supervision per annum, a list of which is, of course, greatly increased under the new law. Yet this is only part of the total slaughter of animals each year in the United States. The report of the Secretary of Agriculture for 1906‡ shows that we have this year (1907) in the United States 20,968,265 milch cows and 51,565,733 other cattle. In addition to the number of animals killed in the government-inspected abattoirs must be added the millions killed in the state and city abattoirs and in the country. The expert would likely find as much tuberculosis in them as in the animals slaughtered under the federal eye. The evidence in favor of this view is, that officials of the various states, trying cattle with tuberculin, have, in report of tests sent in to Washington, from whence they obtained the tuberculin for the tests, attested that from 2.79 to 19.69 of reacting cows are tuberculous and are slaughtered as such.

Notwithstanding the fact that the bill the stock-raiser is making for himself for tuberculous meats is enormous, to him must be charged the bill for milk infected with the bacillus tuberculosis. Through the copartnership of the veterinary and human medical professions in a campaign of education, the people are learning the dangers lurking in contaminated milk. Milk becomes tuberculous through the agency of the cow, from the tuberculous udder and from the feces. In the state of Illinois we have no law requiring the Pasteurization of skimmed milk to be sold or distributed pro rata to farmers by creameries, and

‡ P. 65.

these farmers get this tuberculous concoction to feed to their hogs. Does not this need rectifying, as has been done in Iowa and Minnesota? Tuberculous milk can infect hogs; why, then, should men drink it? Even if tuberculous milk cannot infect men, except in rare cases, as the Koch school alleges, do we want to use it? I am one to help give a verdict on Koch that his case is not proven. Tabes mesenterica, or tuberculosis of intestinal origin in children is undoubtedly increasing, as the specialists in pediatrics and dietetics tell us. How many tuberculous epidemics among children are due to the ingestion of tuberculous milk, has not been studied. The danger is certainly great. In short, animal tuberculosis is perilous to man and beast through ingestion of milk as well as meat. It is too costly a disease, therefore, to be harbored by any farmer.

Moreover, the unobtrusiveness, the insidiousness and continuousness of the disease in animals constitutes its greatest danger, besides being, though unknown usually to him, its greatest cost to the farmer. The fact that an animal reveals no symptoms of tuberculosis in life, and at death is fat, makes the danger from the flesh none the less when the lesions are extensive and generalized. Neither do the lack of symptoms, nor the fatness, alter the fact that the animal may be a source of infection through the feces. If it should come to pass that the stock raiser has to foot the bill for condemnations, the expense to him will be sure to continue to increase, unless he eradicates the disease from his premises. Unless the state, or the United States, intervenes to eradicate the disease, which it is their plain duty to do, the stock raiser will remain incredulous that he has the disease in his herds, or he will hide his knowledge of the disease, for fear of losses from it when the sale of his animals takes place. Certainly the responsibility for animal tuberculosis rests with the producer; but appraisement of his animals will have to be made and indemnity given him before the stock raiser will agree to have tuberculosis eradicated.

III.—The cost of animal tuberculosis to the general public or meat consumers.

Gentlemen! We are part of the great general public of meat consumers interested in animal tuberculosis in an unusual degree. We are neither raisers nor buyers of live stock. Yet the presence of the disease in animals and its rapid increase has more meaning to us than money. The question is not one of filthy lucre, of profit and loss to us. Animal tuberculosis to us means the possibility of infection with the worst of infections. To us the cost of animal tuberculosis is one of cost to the public health. We are, or should be, as veterinarians, persons interested, by virtue of our studies in the laboratory, our observations in clinical practice, and in the holding of post-mortem, fully alive to the dangers of the disease to the public health.

We have certain standards for the inspection of meats and meat food products, furnished by the wisdom of the federal government. These have been adopted, in the main, by the several states, whenever they have chosen to have meat inspection laws of their own, covering exclusively meat going into state trade. For example, the state of Pennsylvania, and perhaps the state of Iowa, have followed fairly well the United States standards in the administration of the new state meat inspection laws. On the other hand, though milk comes close to meat as a necessary food product, and though untold millions upon millions of gallons are sold, where are the standards for milk inspection similar to those for meat inspection? Look at the variety of opinions on milk as a source of infection, the lack of state and interstate supervision of the milk trade, and that in all dairy products. When one remembers the experiments of Mohler recently, in which he injected separator slime into guinea pigs, with the result that they became rapidly tuberculous; and when one remembers the common infectiousness of skim milk and buttermilk, one's flesh begins to creep at the thought of the danger from this source of infection.

Again, there is a vast trade in the flesh of animals, other than that proceeding from official abattoirs and bearing the label of approval of the United States Government; that from animals killed on the country side without a semblance of inspection; that

in small towns where there are no inspection ordinances; that in cities where there is no expert municipal meat inspection; that in territories or states where no laws on the subject prevail; that from animals killed, nobody knows how nor where, brought to town and peddled from wagons, or that from animals driven in on the country roads or coming in by local trains. The cities of Europe, Paris and Berlin, for instance, watch closely all such avenues of the municipal meat trade. How much meat carrying tuberculous infection is sold coming from these particular sources? The movement of the meat packers of the country to prevent sales to them of tuberculous animals, except at low prices, would come to nought, as far as controlling tuberculosis is concerned, unless there is a general and thorough-going movement for the eradication of the disease, evidenced by each state giving sufficient power to the state veterinary sanitary officers, of a kind agreed upon in a national conference of the live stock sanitary boards, and by the appropriation of sufficient funds by Congress to enable the Bureau of Animal Industry to carry out its prerogatives regarding this and all other communicable diseases of animals, granted in the fundamental act of 1884.

IV.—Suggestions on sanitary measures against animal tuberculosis.

Pending the time when the movement shall have gained enough strength for the eradication of the disease, we may consider measures for the control of this dire infection.

These may be:

1. An act to prevent the further introduction of tuberculosis into the state of Illinois by means of breeding stock and feeders. This should be similar to that in force in Pennsylvania and similar to the United States regulation which forbids bovine animals being sent here unless they have been tested with tuberculin.

2. An act to prevent the spread of tuberculosis in human beings and animals, through the consumption of contaminated milk, by requiring the Pasteurization by creameries of skimmed milk before it can be offered for sale or distributed pro rata to farmers.

3. An act inaugurating a system of meat inspection for the state similar to that in force in Pennsylvania, with paid inspectors giving all their time to the work. A casual study of the present law makes me believe it insufficient to meet the state's needs. As I understand it the law, as it is administered at present, is made operative chiefly in cases of glanders, Texas fever and scabies. As a live-stock sanitary measure it is no doubt admirable as far as it goes. It could well be supplemented by a law similar to the meat inspection law of the state of Pennsylvania.

4. Prizes at the state fair and all county fairs should be given only to such bovine animals as can pass the tuberculin test.

5. A state live-stock sanitary board laboratory should be established as soon as practicable, best of all at some point at the centre of the live-stock industry of the state, and having connected with it an experiment farm. The object should be to investigate infectious and other diseases of animals occurring in the state, their detection, prevention and control. One of the duties of such a laboratory would be to manufacture tuberculin and other sera for the detection of disease.

The state of Wisconsin has adopted a course which the adjoining state of Illinois can well afford to follow. No other state in the central west, perhaps, has done more against tuberculosis. If Illinois, with Wisconsin and the adjacent states, would take concerted action to control the disease, that would be a great boon.

Under the federal law which founded the Bureau of Animal Industry, the Department of Agriculture has sufficient power to stamp out tuberculosis. The time seems opportune that a conference of the departments of agriculture of the several states be held in conjunction with the officers of the Department of Agriculture of the United States, to consider ways and means of tuberculosis eradication, similar to the conference held in the south on tick eradication; that omissions or defects of the sanitary laws of the states, hindering tuberculosis eradication, be

brought out; that studies be made of the places worst infected with tuberculosis; that quarantine be set up against the disease; that money be appropriated for tuberculosis eradication as has been done for tick eradication in the south.

The propaganda against animal tuberculosis must be one of education. I have said enough on the question to uncover to you its vastness. The main point, though, that I want to bring out is not so much that tuberculosis eradication is a vast work; but that it is *our* work. We may well almost stagger at the thought of so great an undertaking. Still, sound sanitary science requires us to stick to the work, when we have well begun, until the disease is eradicated.

> "Stick to your work and be wise,
> Certain of sword or pen,
> For ye are neither children nor gods,
> But men in a world of men."

VETERINARY education in Scotland has taken a distinct step forward, thanks to the generosity of a former graduate of the Dick College, Mr. A. I. McCallum, J.P., M.R.C.V.S., who by his magnificent gift of £15,000 has endowed a chair of Pathology and Bacteriology in that school. The chair having been duly advertised, the board at their recent meeting appointed as the professor, Dr. Gerald Leighton, F.R.S.E., who has held the position of lecturer on the subjects in the college for the past six years.—(*Live Stock Journal, England.*)

A USURER.—A story is told by a lawyer of Little Rock, Ark., about the sad case of a native of that town who sought justice by reason of the theft of a horse belonging to him. As, however, the man who took the animal returned it to the owner, the lawyer advised the aggrieved one to let the matter drop.

"Can't I have him arrested for usury, then?" demanded the man, indignantly.

"What on earth do you mean?"

"Doggone it, mister, he used the hoss, didn't he? Yes, sir, he used him mighty hard by the looks of him."—(*Philadelphia Ledger.*)

OBSERVATIONS ON ANTHRAX AND SYMPTOMATIC ANTHRAX.

By WHITFIELD GRAY, V. S., Newton, N. J.

A paper presented to the Veterinary Medical Association of New Jersey at its semi-annual meeting at Newark, July 9-10, 1908.

The fact of the recent occurrence in Sussex County of this state of an outbreak of anthrax and also of the death of quite a large number of young cattle from symptomatic anthrax with both of which invasions of disease I was associated throughout their history, was the cause, I presume, of a number of requests by members of this association that I prepare a paper for presentation at this time. For that reason, therefore, our esteemed president has selected for my subject the consideration of the allied condition of anthrax and symptomatic anthrax commonly known as black leg. It is not my intention to offer a contribution to veterinary medical literature looking toward the elucidation of this formidable scourge nor by any means an exhaustive paper in these diseases of the longest known ancient history and of which particular disease we are all more or less familiar. Although this form of disease has long since been classified among the historic pestilences, I think it can be safely stated that not all medical men have had personal observation of it, and while it is true that it has been most widely disseminated and present throughout the whole world and in its geographical area it has been found in all latitudes—in the Siberian and Lapland and even Polar regions to the temperate tropics of the West Indies.

One instance may here be mentioned of the ravages of anthrax, and which is credited with being authentic, is that of its appearance in Russia in 1864 when there died of horses and cattle 72,000, while again in one of the districts of central Europe from 1867 to 1870 there perished more than 57,000 horses, cows and sheep, together with 528 human beings; nor have wild animals escaped, for it has been proved that buffalo, deer and rein

deer have fallen, and even the elephant has not been spared. But it is not with the more remote localities that we are especially concerned, and the objective point to-day deals largely with local outbreaks, referred to already. So far as I can learn, the disease in New Jersey has appeared only in certain sections, so that to the ordinary practitioner anthrax conditions are so uncommon that the disease really has often to be rediscovered. My first acquaintance with this malady was during the winter of 1906 when 11 cows and 2 horses died during a period of 14 days and on one farm. The information reported to me on my first visit was that several cows had died, five in number, and from a variety of causes, the first was found in the morning in a doubled up condition in the stanchion, death in this case being attributed by the attendants to choking. On the second day following another cow was found dead and in this case accidents attending the parturient period was given as a cause. On the third day following the second death the cows were turned into the yard and a cow was noticed to be acting in a nervous manner and she was placed in a large box in the barn, as it was also thought that in this case the parturient period was about completed. After being placed in the box the cow made several attempts at lying down, then many evolutions of the stall, then a variety of butting and rushing together with bellowing spells, and finally falling in violent paryoxisms lasting several minutes. All this time there was copious discharge of saliva, together with some blood-tinged froth from the nose and excretory avenues. This condition continued for not longer, I was told, than 35 to 40 minutes, when death took place. The day following another cow was found dead in the stanchion in the morning and preparations were made for removal of the body by dragging of the skinned carcass across a field, and this task being completed and the team of horses was returning to the farm barn when one of the horses began to show a disinclination to progress evidently much as a horse with approaching or present azaturia will evince. Very soon he ceased to progress further and fell and remained in this partially paralyzed

condition until I arrived. This was about 11 a. m., and the symptoms presented in the case of the horse, which, by the way, was fat and about nine years old, were not at all dissimilar or unlike those that I seen in the last stages of a case of cerebro-spinal meningitis. There was intense excitability, constant movement of the legs and head and violent trembling with greatly labored breathing and somewhat bloody appearing expulsions. At this period the temperature registered 105.4 F. The excitement rather abated and finally there was pronounced starring and coma with falling temperature even sub-normal and death at about 6.45 p. m.

The remaining cows affected died during the following six days all of the number exhibiting the peculiar intensely excitable phenomenon characteristic of acute anthrax. The second horse was taken sick about the middle of the period during the run of the disease and lived about eight days, if my notes are correct. The symptoms in this case were decidedly mild in the start, in fact, the only apparent evidence of a departure from that of a normal state being colicky pain at intervals of each hour for the first day and a half and a steady temperature ranging from 104 to 105.8. The next period was more pain and a temperature to 106 and 106.2, with a tendency toward partial paralysis of the intestines; in fact, all of the internal viscera. During the following days the symptoms described increased with stationary temperature, and, as the paralysis was progressive, it also became more pronounced until there was a completeness of this feature with the ushering in of coma and death in the eighth day. I might here add that this case was, and one cow was, the only ones where treatment was offered. In the horse it proved only palliative, while in the cow there was recovery, this, however, was only a very mild case, in fact, it was a grave question, in my mind if anthrax really existed or if it might not have been confounded with a condition of retained foetal material.

I would also add at this time that in each one of the cows there was almost completion of the parturient period or immediately thereafter.

That ended the death list of the animals on this farm, as preventative inoculation was employed, each animal of the remaining 32 receiving subcutaneous injection and again a second in ten days. It might also be opportune to state that the only symptoms presented following the introduction of the vaccine virus was an accelerated breathing and a degree of temperature during the following day after the initial injection or vaccination.

My other experience with the anthrax variety was during the past winter and relates to a particularly active appearance of symptomatic anthrax or what is more popularly known as black-leg. During the month of January, in a herd of 24 young cattle and four cows, there died two yearling heifers; in February two and in March seven, the last three dying a day apart. In all eleven deaths. The farm also contained 24 sheep, 2 horses and 52 angora goats and 4 young caloes. In an adjoining farm there was reported to me seven deaths of young cattle in a herd of 22 animals, in another two deaths and three or four other farms one each. In all of these places and in every instance death was attributed by owners and observers to the partaking by these cattle of laurel leaves which grow in very great abundance in this mountainous region. On the remaining animals in this community preventive vaccination has been employed and no deaths have been reported as yet. My inquiries into the subject of the existence and presence of black-leg in this very high and mountainous region brings out the fact that it has existed there, as nearly as I can trace, for fifteen years, more or less severe, sometimes only taking two in a herd, other times one and again, in one instance, it was reported to me by a reliable man, that during one winter 38 out of 40 died in one barn. In fact, so ravaging has been the devastation of this disease that the raising of young stock has been abandoned. Believing that preventive vaccination is the only efficacious means known to us, it can easily be seen that the repeated use of vaccine will have to be embraced for

some seasons, at least. I found from inquiry that these deaths sometimes occurred in winter, other seasons in summer, but almost invariably during the extremes in the season's temperatures. I saw only one living subject of this disease and the symptoms were in general, I was told, of the other cases. This was first a loss of appetite, dullness and general debility and a temperature of 107 degrees at the time of my visit, and the disease had then been present three days. There was a marked stiffness of the right front shoulder together with a decided swelling of that part. Death followed the next day, which was the fourth day. There was difficult breathing, occasional attacks of pain and increasing weakness preceding death, and also increasing size of the tumor or swelling on the shoulder which responded with a crackling noise when pressed with the hand.

I made a post-mortem examination of this and four of the other cases of the more recent date of death and where decomposition was not too pronounced. In all the cases I noticed the same general similarity of pathological lesions. In cutting into the bodies and into the tissues under the skin it was found to be infiltrated with blood and yellowish, jelly-like material and gas bubbles. The muscular tissue beneath the swelling was brownish-black and shading into dark red and yellow. In the abdominal and thoraic cavities there was an accumulation of blood stained fluid together with patches on the walls of these anatomical regions, with blood spots or ecchymoses in the intestinal coverings and in the lungs and heart.

To confirm the diagnosis I took sufficient and repeated specimens and forwarded them to the Laboratory of Hygiene at Trenton, and after due research at that institution I was informed that the bacteriological examination said black-leg. The matter was taken up by the State Board of Health with an order that I vaccinate all exposed animals.

Returning to the cases of anthrax and to the post-mortem phases which is done for differential comparison, I will say that I made an examination of several of the cows and also of the horses and it will be remembered that they all died in a rather

acute form. First the blood was dark, thick, tarry and unclotted, much as it is after blood letting during life. The entire venous system was engorged. The spleen was enlarged two, three and even four times its natural size. It was pulpy and softened and of a dark tarry color. The intestinal walls were more or less infiltrated with a sero-hemorrhagic exudation. Large and small collections of blood and effusion of blood colored liquid was present about the heart and lungs. I observed no intestinal or other cabuncles.

The pathological changes that anthrax had caused in the horses differed especially from the cattle in that the jelly-like yellow and sero-hemorrhagic infiltrations were encountered in nearly every portion of the body where there was loose connective tissue, and especially along the course of the great blood vessels, in the mediastinum, peritoneum and about the kidneys. I must not forget to state that although these deaths occurred during March and when the thermometer was hovering almost zero, certainly below freezing, there was especially in the cows very marked and very rapid decomposition, and from what I learned in the post-mortem examinations I was convinced that a gangrenous condition had preceded death, particularly in the horses in the lymphatic structures. I obtained a variety of specimens at the Laboratory of Hygiene for observation, and Mr. Fitz Randolph, the director, also viewed some of the bodies with me. His careful researches in the laboratory and inoculations of smaller animals produced positive results and confirmed the diagnosis of anthrax. Perhaps one of the most interesting features of this outbreak of anthrax on this farm was the origin and from whence came the bacterial visitor. The farm is quite isolated, in fact, away from the public road. No contagious disease of this nature had ever been present, in fact, no anthrax had ever been recorded in northern New Jersey's history. No animals had come on the farm for years, all had been raised there. The only explanation I could offer for the presence of anthrax was that a short time prior a package of meat scrap had been secured for

the chickens and fed to them. It was said that several of them had died. At any rate, one sick hen, a favorite, was placed in the cow and horse stable where it was warmer and allowed to walk about there for three or four days until she died. This was the only solution I could offer for the introduction of the infection.

To conclude my remarks I want to say that the two practical striking features to me and that which particularly impressed me from an observant clinical standpoint was the comparative relationship of these diseases, and finally after all the apparent fact that the soil and local conditions are among the chief factors in the development of these farms of bacterial life and which is hardly to be doubted.

CLEMENT STEPHENSON MADE A DOCTOR OF SCIENCE.—The honorary degree of Doctor of Science has been conferred by Durham University on Mr. Clement Stephenson, F.R.C.V.S., Sandyford Villa, Newcastle-on-Tyne. Sir Isambad Owen, introducing Mr. Clement Stephenson for the degree, said that some might remember the dismay which some forty years ago greeted the daily repeated news of ravage made among the herds of this country by certain virulent epidemic diseases imported from abroad. That England was saved in those days from ruinous loss was due to a band of earnest scientific workers who had been pursuing the then little cultivated science of veterinary pathology, and the measures which they induced the Government of England to take. He presented one of that memorable band to whose efforts, in the office of veterinary examiner for Newcastle and Northumberland, the preservation of the North from serious disaster was at that time largely due. He followed up in successive years his fruitful line of research, contributing at a later date by his evidence before departmental committees in 1888 and 1893 in no small measure to rid us of two of the most destructive pests that had made their way into our country. As one of the most distinguished living authorities on veterinary subjects, and as a man who had rendered signal service, he might be content to present Mr. Clement Stephenson, but it must not be forgotten how prominent a part he took in the establishment of an important chair in this university —the chair of comparative pathology and bacteriology.—(*Live Stock Journal, England.*).

CHANGES IN THE BLOOD OF PARASITE-INFESTED SHEEP ON AN INNUTRITIOUS DIET.

By Ward Giltner, D. V. M., M. S., Auburn, Ala.

The effects of parasitic infestation on the blood of man have been studied by different hematologists. Little is known, however, about the blood of sheep either in their normal condition or when affected by any of the numerous parasites that attack this valuable domesticated animal. The following is a review of the data on the blood of normal sheep as compiled by Burnett: "The red corpuscles of sheep's blood are smaller than those of the cow. Welcker gives the average diameter as 5 microns. Bethe gives the diameter as 3.9 microns to 9.5 microns. The number per cubic millimeter is 9,133,000 according to Bethe, and 12,090,000 according to Cohnstein. Muntz gives the specific gravity of the blood of sheep as 1,038. Bethe gives the leucocytes as 4,140 per cmm. as normal for sheep. The varieties of leucocytes, according to Hirshfield, are: (1) eosinophiles resembling those of man, (2) neutrophiles with very fine and numerous granules, (3) mast cells and (4) lymphocytes. The numbers of the different varieties have not been determined."

During the months of December, 1907, and January and February, 1908, I had the opportunity of examining the blood of seven sheep affected more or less extensively with the lesions produced by Oesophagostoma columbianum and in most of the cases there were present a few, never very many, stomach worms (Haemonchus contortus). I am greatly indebted to Dan T. Gray, Professor of Animal Industry, and his assistant, Mr. Ridgeway, for supplying me with these subjects and data relating to their previous treatment in addition to the results of their efforts to prevent losses in the station flock. All the sheep that came under my observation died within a day after the blood examination was made. The larval forms of the oesoph. columbianum

were demonstrated to me under the microscope by Mr. H. W. Graybill, of the zoological division B. A. I. Those interested in the parasites of sheep would do well to read B. A. I. Circular No. 932, and Louisiana Exp. Sta. Bull. No. 893.

The stimulus that urged me to make these blood examinations was the peculiar and striking appearance of certain morphological entities in smears of the first sheep's blood examined, carefully stained with Wright's stain. What first struck me as being possibly hematozooa, pathogenic in nature, I succeeded in proving to be blood platelets, normal constituents of the blood. Mr. Graybill's assistance was of great value in studying these bodies whose nature was exceedingly puzzling at first, but our final conclusion that they were blood platelets was made more tenable by the researches of Leroy D. Swingle, of the University of Nebraska, whose paper we had the pleasure of reading after we had completed our studies. Such incidents as this force one to the conviction that the normal histology of the blood of all the domesticated animals should be studied carefully, so that its appearance under abnormal conditions may be properly understood. Whoever undertakes this study should have in mind the acquisition of a full description of the blood platelets as well as the more commonly understood cellular constituents of the blood. A careful study of Mr. Swingle's paper will show the necessity of thus emphasizing this phase of hematology.

In my studies the hemoglobin estimates were made by Talquist's method, the blood being secured by puncturing or cutting the properly cleansed ear. The count of both erythrocytes and leucocytes was made from the same hematocytometer slide after the blood had been diluted 1-200 with Toison's fluid. In making these examinations the use of a high ocular and a 4 mm. objective reveals the blood platelets as small, morphologically variable, and slightly motile bodies. Many examinations of the blood diluted with normal salt solution were made, using hanging-drop preparations and the highest powers of the microscope. These observations as well as those made on stained smears of the blood

platelets are of no value in elucidating the subject in question and, therefore, will be left for future consideration. I found that the blood of normal sheep told the same story in so far as the blood platelets are concerned, as did the blood of the sheep dying of parasitic infestation.

In previous work on the blood I have recommended Jenner's stain, but samples of this stain purchased subsequently have proved useless. This is not to be construed as an adverse criticism of the stain in general but of those particular samples. Wright's stain is now giving better satisfaction. Properly stained smears show all the cellular elements of sheep's blood and probably all their differential characters as strikinglly as any other one staining reagent. Four different varieties of leucocytes are easily made out, viz., lymphocytes or mononuclears, polynuclears, eosinophiles, and mast cells. The lymphocytes are very variable in size and shape of nuclei, and somewhat variable in staining reaction; but, while I have attempted to differentiate between lymphocyte and large mononuclear, I must admit that further study will be necessary for a proper determination of just what these differential characters are. If a mistake has been made in separating them, it can readily be corrected by including under one heading the figures in both columns in table II.

In attempting to supplement the data quoted from Burnett, time was found for examinations of the blood of two apparently healthy bucks in no way associated with Professor Gray's sheep. These two sheep are designated as No. 1 and No. 2 in the tables where they are placed for contrast. The data included in this article are entirely insufficient to establish an adequate conception of the normal limits that may be found in an extensive examination of the blood of healthy sheep. A study of the tables, however, suffices to demonstrate that the presence of the lesions produced by oesoph. columbianum in great numbers, as occurred in these sheep, together with the occurrence of the stomach worm in small numbers in many of the cases, and a very coarse, unbalanced, and innutritious ration lessen the vitality of the sheep, lead

TABLE I.

No. Sheep.	Per cent. Hb.	Erythro-cytes.	Leuco-cytes.	Date.	Remarks.
1	85	11,500,000	5,330	1-10-08	Normal buck.
2	85	9,120,000	10,900	2-13-08	Normal buck.
179	50	4,250,000	3,000	12-17-07	Pregnant; twins dead; very weak, Oesoph. in intes., lymph gl's, liver.
172	70	7,700,000	6,400	12-27-07	Recently aborted, Oesoph. in intest., lymph gl's and liver.
183	75	6,400,000	11,100	1-9-08	Ate cotton seed meal over month, nodules in intestine
145	25	2,520,000	3,500	1-9-08	Lamb; weak and emaciated, nodules, megalocytes and microcytes numerous.
6	75	8,384,000	9,800	1-10-08	Ate cotton seed meal 6 months, had twins, great many nodules.
8	80	7,640,000	6,000	1-20-08	Had one fetus, torsio uteri, great many nodules.
175	75	7,112,000	8,700	1-4-08	Emaciated and weak, nodular disease.

Note.—Nos. 179, 172 and 175 showed most stomach worms.

TABLE II.

Differential leucocyte count.

No. Sheep.	Total Leuco-cytes.	Lymphocytes.		Large Mononuc.		Polynuclear.		Eosinophiles.		Mast Cell.	
		Number.	%	Number	%	Number.	%	Number.	%	Number.	%
1	5,330	4,370.6	82.	170,56	3.2	618.28	11.6	63.96	1.2	106.6	2.
2	10,900	7,484.66	68⅔	399.66	3⅔	2,071.	19.	835.66	7⅔	109.	1.
179	3,000	900.	30.	45.	1.5	2,055.	68.5				
172	6,400	1,600.	25.	51.2	.8	4,748.8	74.2				
183	11,100	2,175.6	19.6	155.4	1.4	8,769.	79.				
145	3,500	1,166.66	33⅓	140.	4.	2,193.3	62⅔				
6	9,800	1,372.	14.	98.	1.	8,330.	85.				
8	6,000	1,650.	27.5	120.	2.	4,200.	70.			30.	.5
175	8,700	3,588.75	41.25	108.75	1.25	5,002.5	57.5				

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to a fatal issue after producing a marked alteration in the blood picture. A decided anemia, polynuclear leucocytosis, and almost

total absence of eosinophiles and mast cells are the characterizing features. The absence of eosinophiles is of special interest when we remember that many parasitic infestations tend to produce an eosinophilia. In nearly every case the blood failed to flow freely and was of a more watery consistency than that of normal sheep. An explanation of the changes in the blood may lie in the mechanical obstruction offered by the widespread occurrence of the nodules in the lymph channels to the absorption of digested nutrients and to the process of digestion itself. In some cases it could be seen that the digestive and especially the absorptive functions were seriously interfered with, when nearly the whole of the serosa of the intestines, the lymphatic glands of the mesentery, and even the liver to a much less degree were studded with caseated and calcareous nodules, incapable of functionating themselves, but undoubtedly acting as a barrier to the process of natural functions.

The effect of the substitution of a more generous and more easily digested ration in preventing further sickness and fatalities indicates that the nodular disease is detrimental to the nourishment of the sheep purely or at most in a mechanical way. To what extent this effect is augmented by the absorption of toxic substances produced by the parasites, it is impossible to say. I apprehend that the feeder's side of the question will be fully dealt with in a future bulletin of the Alabama Agr. Exp. Sta. by Prof. Gray. It is a subject worthy of the attention of the parasitologist, pathologist and animal husbandman.

IT IS SAID that a case has been decided in a Cincinnati court on the testimony of a parrot. The veracity of such a witness cannot be impugned.

DETROIT'S START.—On July 1st the Detroit Health Board appointed its first Dairy Inspector, an appropriation having been made for that purpose by the Board of Estimates last spring. Dr. Jos. Hawkins, O.V.C., 1871, being the appointee, and under whose administration it is hoped to make Detroit one of the best dairy inspected cities of the Central West.

IDEALS FOR THE VETERINARIAN.*

By T. Earle Budd, D. V. S., Orange, N. J.

This paper treats of those who have been considering the great question which once confronted each practitioner here. What shall I do in life? For what shall I prepare myself? What shall I study to fit myself to make the most of life and its opportunities? How shall I prepare myself to uplift humanity and the things with which I am brought in contact?

And as each "walk of life" has been reviewed many times the choice has been made in favor of the study of the science of veterinary medicine. In order for any education to be successful the congenical disposition of the child must be considered; in other words, he must be interested and this interest, James tells us, necessitates the focal point and the circle of fading importance. Thus the horse must be the interest for the successful equine practitioner and the world only interesting in its relation to this main interest.

Is it not fair to believe that each student making this his choice has the highest ideals regarding the practice of veterinary medicine, and feels, though perhaps unconsciously, that he will have, in the pursuit of that calling, a larger opportunity for growth and advancement than in any other branch of the profession, and that a greater opportunity will be given him, not only to relieve mankind of anxiety, but also to benefit and heal the great God-given animal of his suffering, much of which he unjustly, through ignorance and thoughtlessness is called upon to bear? This decision being reached by the young man to devote his life to the study and practice of veterinary medicine, let us consider the applicant for such a course of study. Do we demand that he come with the proper high school education with

*A paper read before the Veterinary Medical Association of New Jersey at its semi-annual meeting at Newark, N. J., July 9-10, 1908.

all his regents passed? Or do we unconsciously lend our influence to the old deep-rooted idea which the student has perhaps unconsciously imbibed, that anybody without much care or thought can present himself for admission to our colleges, and become a "horse doctor"? I personally am not surprised that we have that term applied to members of our profession, when we demand so little, and set ofttimes so poor an example of professional etiquette, when dealing with each other, and hold in such light esteem what is due each other. But I rejoice that this idea can be rapidly eliminated by giving greater care to the preliminary education of our students. Let us all see to it that our sons inherit from us the highest ideals regarding this most wonderful science, and receive from us the great opportunity for growth and advancement as given in the study and practice of veterinary medicine.

Again, just how familiar is the student with this perfected creature he so longs to benefit and treat? Does he know anything of the horse in its normal condition, before he presents himself as a student of the horse abnormal? The layman is very much alive to this lack of knowledge of the horse normal, and confidence weakens when he sees the display of such ignorance. "By his acts ye shall know him." Has his preliminary education been such that these things will seem of sufficient importance so that he will give due consideration to them and realize the vast difference in the horse he knows on paper and the patient who stands before him? Does he know the horse as we see him every day? The animal, restless, nervous, suffering, but doing the thing required of him in the best possible way, under the trying circumstances, is unable to appear at his best, yes even at his second best. But the result nevertheless makes the owner feel the horse, in which he expected to take such pleasure, from which he would obtain such a large advantage, a failure. Now, the question is, has the training of our professional man been such that he will be alert to find out how many of such conditions come from accessible causes such as poorly fitted harness, etc.? All these things will make a fine animal appear at a great disadvantage.

How many accidents are caused by such inexcusable ignorance! Can he adjust the ills that arise from such causes in any other way than by giving the prescription which calls for the medicine to be given every three hours, until relief comes? Do you wonder, gentlemen, that the horse is often sold in disgust and the machine purchased, for when difficulties come to it the machinist knows just how to approach the trouble. If these are the conditions we find, is it not evident that the preliminary education of our students is sadly deficient, and failure is imminent?

Great structures are never built from the top down, but it is to the care and attention given to details of the foundation that warrants the safety of the building, so it is the care and attention we give to our preliminary education that will fit us to use successfully the knowledge we gain from our college course. Begin by observing the men who are successful and are what you so longed and determined to be when you first decided to make the study of veterinary science your life work. Determine to be not only a successful practitioner, but a respected citizen of the community in which you live, to be a man whose advice will be sought on the civic conditions of the community; a man whose associates are the highest; a man after whom you would be glad to have your son pattern.

Again, never allow yourself to think of your call as a summons to see a horse; think of it always as a call to see a patient, and that implies at once that you have need of just the same courtesy, just the same gentleness, yes, and let me add, just the gentlemanness and just the same quiet dignity of manner and voice that your brother practitioner the M. D. feels is so necessary for his success in life, and without which he would never succeed. Always feel that you even require more skill than he, for no questions can be asked of or answered by your patient to change impressions made. Your patient stands before you dumb, with only certain movement of muscle or action as aids to your diagnosis, but always with that pleading, longing look, asking of you to give to him your best thought and en-

deavor. To you it must be an exemplification of that old adage, "Where actions must speak louder than words."

Again, you must study to meet men and you have here so much to learn, so much to consider! You, by giving much care and thought to your preliminary education, can more easily dispel the deep-seated conviction that the coachman or the neighbor can treat your patient as well as you can, and if care is not exercised in your preliminary education their approach to the case will better inspire confidence than yours, for he at least knows your patient in its normal condition.

To be courteous under ill-advised suggestions means much. For example, I was called upon to see a patient suffering from a severe attack of parturient paresis. In the presence of the owner the suggestion was made by the caretaker that the tail be split and salt applied. Anxiety for the recovery of the very valuable patient makes the owner in a measure attentive to the suggestion and the advice given is often taken with more than a "grain of salt," but to be able to inspire confidence in both owner and caretaker requires study, skill and tact, for you are like all other practitioners largely dependent on the nurse for your success, and your nurse is his coachman, so he is not to be ignored, but to be considered and educated. And his education is in your hands. Never argue, but always be willing to explain as far as you deem wise, and be able to give an intelligent and polite answer to any questions. It never detracts from knowledge to be curteous and polite, and never contradict, but by your manner inspire confidence in your ability to treat this particular case, and the advantage gained under these trying conditions will be lasting and the advantage gained for our profession will show in the growth of each practitioner towards the higher ideal.

DRIVEN TO DRINK.—Artist—My next picture at the academy will be entitled "Driven to Drink." His Friend—Ah, some powerful portrayal of baffled passion, I suppose? Artist—Oh, no; it's a horse approaching a water trough!

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

AN EPIDEMIC OF ACUTE POISONING IN HORSES.

By T. F. RICHARDSON, B. S., D. V. S., Goldfield, Nev.

March 1st I was called to see a sick horse at the Arizona feed yard. From the owner I received the following history of the case:

The patient had not been used for the preceding ten days, had been in good condition up to the previous forty-eight hours when he noticed the horse standing in rather a dull and listless manner with its head hanging in the manger. Upon speaking to the horse he jerked up his head suddenly. Seeing something was wrong he tried to back the horse out of the stall but could not do so. He then swung him around and walked the horse to water. After a few steps patient limbered up and appeared all right. This morning the owner had gone to the stable and found the horse down and unable to rise.

My observations—Sorrel gelding, about seven years old, laying stretched out on side in rather roomy box stall, good ventilation and plenty of clean bedding; temperature, 99.2; pulse, normal; respiration slightly accelerated but not alarming; urine color, bright yellow and copious in quantity; towards the end of the catheterization urine was rather thick and turned a dull white with sediment; alkaline to litmus; made no test for S. G.; heart sounds, good; no abnormal tones in lungs; mucous membrane of nostril, mouth and conjunctiva congested but moist; croup muscles, pliable and soft, could get no signs of pain on palpation on any portion of the body. On giving a command to patient to arise he would make an effort with neck and head but could not use the fore or hind limbs, seemed to be completely paralyzed.

I questioned the owner thoroughly as to what medication had been administered to the patient before my arrival. Nothing had been given, but about a week or so before he had changed the

feed from straight timothy to a mixture of timothy and alfalfa. I advised a large dose (200 gram.) Carlsbad artificial salts, also warm enemas. I also mixed 1 gr. Strych. nitr. and gave hypodermically. Insisted on patient being placed in slings. Patient did not seem to respond to stimulant so gave 1-2 grain half hour after first. At this moment I was called to 'phone and requested to call at Proctor's barn, his team was down and unable to get up. Upon arriving at Proctor's found a gray team down and symptoms the same as in the patient I just left.

History from Mr. Proctor: Team was used to supply the suburbs of Goldfield with water, had been worked the previous day and showed no signs of illness, went to the barn that morning to feed and found them down and unable to get up.

My observations—Pulse normal in both patients; temperature (No. 1) 99.8, (No. 2) 99.6; urine, light yellow in both, thick sediment in the final discharge from No. 2; respiration, good; heart, sound, normal; visible mucous membrane, bright red; gluteal muscles, soft and pliable, no signs of pain from palpation.

I cracked a whip and commanded horses to get up. They made an effort with neck and head, but could not use fore or hind limbs. As I was finishing my examination I was called to the 'phone and requested to call at once at the Trading & Transfer Company barn, one of their horses was down and could not get up. I gave Mr. Proctor a prescription for a saline purgative to be administered at once, and get patients into slings. I arrived at the Trading & Transfer Company barn and found a large sorrel gelding down and showing the same symptoms as the other patients. I prescribed salines and enemas for this patient and insisted on the slings. It will be noticed that I have given no diagnosis in these cases. I could not give one, for the simple reason I did not know what was the trouble. My first impression was spinal meningitis, but lack of any abnormal temperature or accelerated pulse rate would eliminate this diagnosis, azoturia. The previous history, together with the clear yellow color of the urine and softness and pliability of the muscles generally involved in this condition would exclude this disease. Nephritis I also removed from the possibility of it being the disease. It was at this moment, while trying to bring my mind to bear on the different causes which would lead to such conditions, that the manager of the Trading & Transfer Company gave me the clew which subsequently proved, to my mind, to be the cause of

the trouble. While walking through the barn discussing the probable prognosis of the patient I had come to see I asked him what feed was used in the stable. His reply was that generally they fed timothy and oats, but about February 22 they had received a consignment of hay, it being a mixture of alfalfa and timothy, and it did not look good to him.

I looked at the hay in question and found it rather dusty and the centre of the bales consisting of the hard stems of alfalfa, no blossom was visible and the leaves would crumble into a fine dust when rubbed between the fingers. I now hurried back to see the owners of my previous patients at the Arizona feed yard. They had changed from timothy to timothy and alfalfa. About February 23 on that day they had received one ton of hay from a small dealer (Holmes) for a bill due of $32, half of this hay was timothy, the other consisted of timothy and alfalfa. The reason for going into the details of this transaction is because the whole fabric of my investigation rested on the above statement and its proof. At Proctor's they had changed from straight timothy to the mixture about three days before his horses were taken sick. He received his feed supplies from the Trading & Transport Company. From March 1 until about the 27th I received about four calls daily to see different horses which were down and unable to rise. In every case they had changed the hay ration after February 22 from timothy to the mixture. I told the individual owners and also put notices in the public prints about the poisonous qualities contained in the mixed hay, for by this time I had come to the conclusion that the horses were being poisoned and that the toxin was contained in the mixed hay.

My conclusions did not seem to meet the approval of the majority of the horse-owning public. To use their own expressions, "Why they fed alfalfa before I was born and it never killed any horse. Then why should it kill them now?" Things were getting pretty bad for me, my reputation and practice was at stake and something must be done. At this stage I sent for the state veterinarian, who, upon arrival, looked into the matter and agreed precisely in my diagnosis that the source of the trouble lay in the mixed hay. But this was not sufficient for the horse-owners. They said he was of the same profession as myself and professional courtesy would make him agree with me. To make matters worse I sent a sample of the hay to Agricultural Department of the State University. Dr. Mack, the bacteriolo-

gist at that institution, could not find anything deleterious in the sample tested and would have no uneasy feelings in feeding his own horse the same class of hay. I also sent him a specimen of the spinal cord at the lumbo-sacral region from one of the horses, but the cord being too complex in its structure could hardly be made the subject of a final diagnosis. Post-mortems, did I make any? Yes, fifteen; but I will bring them out in the summary of this article.

At about this time forty-seven horses had died from this affliction and I had fifteen others in improvised slings. All pa-

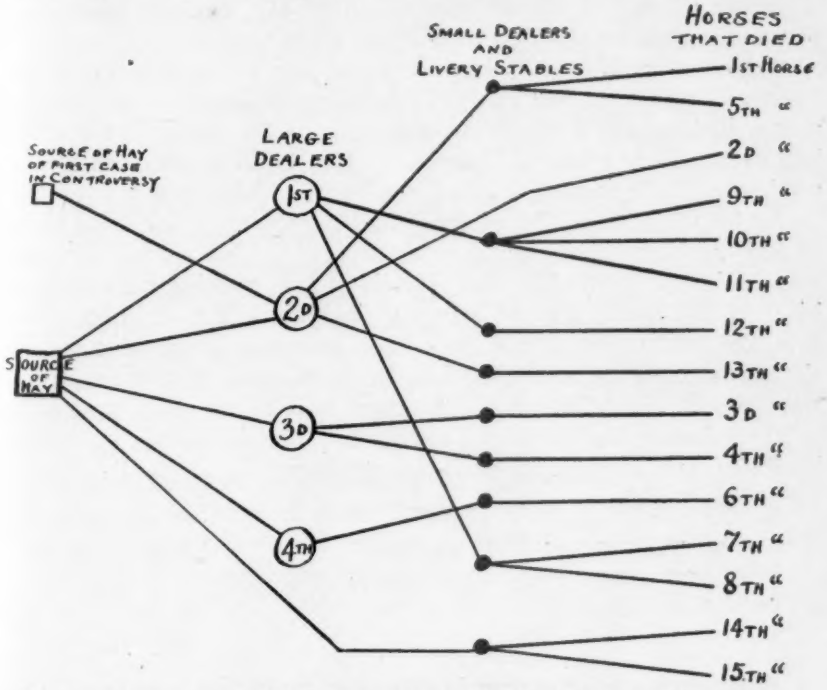

Diagram showing source of hay and how it reached horses through different dealers.

tients on bran mashes and timothy hay. After a thorough purgation, some of them almost to the point of super-purgation with salines, and each receiving three times daily 15 grams Fowler's solution, they are all well now and at work. Some of the patients receiving a gallon of the solution during these treatments. The fact of the matter is, I pushed this treatment to the limit. I was persistent in my belief that the source of the trouble lay in the mixed hay, and to better impress my clients I made out the following diagram attached.

Every horse that suffered from the complaint partook of this hay.

I had now convinced my clients that I was right in my contention, except the source of the hay from which the first horse taken down with the complaint died. As I remarked in the first of this article, the pivot of the investigation was in proving that this horse partook of the hay. Mr. Holmes, who sold the hay, to square a bill of $32, insisted that he never had a mixed hay in his yard. The Arizona feed yard claims they received one-half a ton of mixed hay from him and that the horse which died ate it almost all up. I did not care to doubt Mr. Holmes, knowing personally that he received all his hay from another direction.

About a week later I went down to the Trading & Transfer Company's barn to see how the patients in slings were getting along, incidentally I asked the manager of the stable if the firm had ever sold any hay to Holmes. "Let me look over the books a minute," he remarked, "and I'll tell you." After going over the books he found that Mr. Holmes had borrowed a couple of tons of hay until his own consignment arrived. This couple of tons was a mixture of timothy and alfalfa. I said nothing but thanked him. I hot-footed up the street to interview Mr. Holmes. At first Mr. Holmes could not remember, but as the remembrance of the transaction dawned upon him he recollected that to make an even $32 in the price per ton he gave half of one kind and half of the other to the Arizona feed yard. The following from the books of Mr. Holmes will tell its own story:

Feb. 23d, to Arizona Feed Yard,

½ Ton Timothy, @ $35 per.....	$17 50
½ Ton Mix. Tim. and Alfalfa @ $29....	14 50
	$32 00

Summary—Forty-seven horses died from the complaint, fifteen got well.

The symptoms in each case were identical. After the patients would be put in slings they would support themselves on their own limbs and eat and drink as if nothing was the matter for about twelve hours, then they would collapse in the slings, and to save them from choaking to death they would be lowered to the ground. After a rest of some hours they could be slung again, but each time they appeared to get weaker. During the final twenty-four hours the temperature would go up excessively

high—107½ being common. From the rise of temperature I could foretell the probable time of their demise. Of the fifteen cured only two showed temperature above normal, one showed 103 and the other 102½. I prescribed aconite, seven drops every fifteen minutes for three hours, and I would call this reduced temperature in both cases, it never reoccurred.

The post-morten lesions that I could find consisted of a congested appearance of the meninges of the cord, especially in the lumbo-sacrel region. All other organs seemed normal. Of course, I found isolated lesions in lungs, kidneys, liver and spleen on different cadevers, but not the same in each case or were they, in my opinion, the cause of death in any one case. The psoas muscles in three cases had a washed out appearance, and in each the right kidney had a small abscess encapsulated in the tissues but not large enough to merit consideration as a cause of death.

In conclusion, I may add that my own opinion of the cause of the epidemic is not in the alfalfa as a feed but that we here in Goldfield were unfortunate to get into a stack of hay which was either moldy, had been put up too green, and fermentation of some kind had taken place, or the alfalfa was second crop, which was cut too soon. Since the elimination of this hay we have had no new cases, but one dealer, "who, by the way, had sixteen horses down with the complaint," having a large quantity of this mixture on hand, asked me what to do with it. I told him to feed it lightly to his stock, say, about three feeds a week, but not to give two feeds in succession to the one horse. In this way he could save the hay. I gave him this advice over the 'phone. It seems he got my advice mixed as well as the hay, because he commenced to feed it exclusively to one horse every meal with the result that four days later I was hurriedly called to attend the horse's demise.

GENERAL ANAESTHESIA BY INTRAPERITONEAL INJECTIONS OF CHLORAL HYDRATE.

By J. Martin Rice, V. S., Bobcaygeon, Ontario, Canada.

After reading an editorial in the American Veterinary Review of May, 1907, concerning general anæsthesia produced by intra-peritoneal injections of chloral hydrate by Professor Sendrail, I was tempted to investigate that drug in the above way.

According to Professor Sendrail, the dose required to produce anæsthesia by this channel is: For the horse, 25 to 75 grammes (℥viss—℥xxi), or 1 gramme for every 10 kilogrammes (approximately 70 grains per 100 pounds) bodyweight of the horse.

For dogs, the dose varies from 2 to 12 grammes (℥ss—℥iii), or 1 gramme for every three kilogrammes (15½ grains for every 6½ pounds of bodyweight.

It is given in a 10 per cent. aqueous solution, and Professor Sendrail claims that it does not affect the heart in the least, nor does it produce excitement of any account.

The solution is injected or poured into the peritoneal cavity by the aid of a trocar and canula, with a funnel and a piece of rubber tubing to attach to the canula after the trocar is withdrawn. A large syringe may be used instead of the rubber tubing and funnel. The experiments I have performed have been almost entirely upon dogs, and the following are a few of them:

No. 1. Collie dog, weighing about 35 pounds, was given (intra-peritoneally) 75 grains of chloral hydrate in a 10 per cent. solution. No anæsthesia resulted, only a slight drowsiness.

N. B.—This solution had been made for several days previous to use.

No. 2. Same dog as in No. 1 experiment, two days after, was given an intra-peritoneal injection of 80 grs. in a 10 per cent. solution. When the solution came in contact with the peritoneum it produced slight pain. Two minutes after injection he trembled and shivered and reeled around in a drunken fashion, toppled over several times, evidently having no control over himself.

Fifteen minutes after injection he laid down and slept, but still continued to tremble as if chilled.

About two minutes after he had gone to sleep castration was performed, and the only time he evinced pain was when the cord was severed, which he showed by raising his head slightly and giving a low moan.

The heart beats were normal but the respiration was slightly increased and decreased at intervals.

Forty-five minutes after injection neurectomy of the right front leg was performed, no pain was evinced when cutting through the skin, but when the nerve was severed there was slight pain. The skin was sutured during which time the dog licked the operator's hands. No pain was felt when the needle was thrust through the skin.

After the operation was finished he would look around at his scrotum and lick the wounds (both scrotum and leg), and when spoken to and petted would appear as if nothing had happened.

Fifty-five minutes after injection the animal drank about a pint of water. Food was offered about one hour after consciousness returned, but was refused, although he appeared quite bright and cheerful. Four hours after food was again offered which was eaten very greedily. No ill-effects followed.

During the period of anæsthesia the nose became very hot and dry. The eyes were bloodshot and partly closed and tears ran down the cheeks. The tongue hung out of the side of the mouth and both tongue and mouth were very dry.

In this case it shows that castration was performed before anæsthesia was complete and that neurectomy was delayed till within a few minutes before consciousness returned. If castration had been delayed for a few minutes, probably no pain would have been felt.

No. 3. Dog weighing about 45 pounds and very fat was given an intra-peritoneal injection of 95 grs. of chloral hydrate. This dog was very savage and had to be tied to the floor by the aid of ropes passed through two rings in the floor, and before we could get him unfastened after injecting he was in the stage of narcosis. Slight irritation was produced when the solution came in contact with the peritoneum.

The animal had just gone into a nice, sound sleep when he vomited the food which had been given him half an hour previously, and would have been asphyxiated had not his head been raised and the food shaken out of the mouth and throat. The animal being unable to move himself because of partial anæsthesia.

Castration was performed and not the slightest pain was felt, anæsthesia lasted two hours.

During anæsthesia the nose was hot and dry, tongue protruded from mouth, and both mouth and tongue were very dry. The eyes were partly closed and tears ran down the cheeks.

Heart beats were normal and respiration was increased and decreased alternately.

When consciousness returned he drank an enormous quantity of water, similar to No. 2 experiment.

No. 4. Same dog as No. 3, but experiment was performed two weeks later; was given 100 grs. in 10 per cent. solution.

Anæsthesia was complete in a few minutes. At the end of three and one-half hours strychnine sulphate gr. ½ was given hypodermically.

Fifteen minutes elapsed still no change took place, but on being touched upon the nose a violent spasm developed. During the following thirty-five minutes ten more spasms developed, the last resulting in death. The animal died without regaining consciousness, and on the spot where it had lain during the whole period of anæsthesia.

No. 5. Collie dog, weighing about 35 pounds, was given an intra-peritoneal injection of 85 grs. in an 8 per cent. solution. In about ten minutes the animal became slightly narcotized, which lasted about fifteen minutes and was then as well as ever again.

No. 9. Dog weighting 25 pounds was given 70 grs. in a 10 per cent. solution. Anæsthesia was complete in five minutes; castration and laparotomy was performed, anæsthesia lasted three hours. The animal made a good recovery.

No. 11. Dog weighing about 40 pounds was given 120 grs. of chloral hydrate in a 10 per cent. solution. Anæsthesia was complete in twenty minutes. Amputation of the left front leg at the knee was performed. No pain was felt during the operation; anæsthesia lasted four hours. He made a good recovery and was kept for other experiments.

No. 12. Dog weighing about 30 pounds was given 100 grs. chloral hydrate in 10 per cent. solution. Anæsthesia was complete in twenty minutes. The cranial covering was then removed during which time the animal gave a few low moans. The brain and coverings were found to be very hyperæmic (engorged). A portion of the brain was removed and during that time two or three twitchings of the body took place.

The next step taken was an incision right through into the abdominal cavity, and the peritoneum, and intestines examined for any change which might have resulted from the injection of chloral hydrate upon the membrane; everything was found healthy.

The thoracic cavity was opened next and the heart viewed which seemed to beat quite natural; this was watched for twenty minutes when an incision into the heart ended its function; the blood squirting about fifteen inches out from the incision.

No. 13. Dog weighing about 35 pounds was given 100 grs. of chloral hydrate in a 10 per cent. solution subcutaneously at the flank. Narcosis followed in forty minutes and lasted for fifteen

hours but no anæsthesia resulted. The part where it was injected was painful when touched for two or three days after.

The anæsthetic action of chloral hydrate may be due to depression of the cerebro-spinal centres and cerebral hyperæmia combined. When chloral hydrate is given by the mouth it is undoubtedly changed to a considerable extent by the alkaline contents of the small intestine; and that may be the reason it does not act very well as an anæsthetic when given that way. Anæsthesia can be produced by intra-venous injections of the drug, but is very dangerous. It should be given when the stomach is empty so as not to produce vomiting, which it does probably by acting upon the vomiting centre in the medulla.

It acts best when given in 10 per cent. solution. The heart beats were normal and the animals, as a rule, are as bright as ever in about eight or ten hours after consciousness has returned if plenty of water is given to drink.

The solution is best when prepared fresh. Strychnine seems to be of little use as an antidote but pilocarpine is very satisfactory, as it promotes the elimination of the chloral hydrate.

When operating upon animals under the influence of this drug the blood vessels should be ligatured to prevent bleeding, because chloral is a vaso-dilator and hæmorrhage is likely to occur from the larger vessels.

NOTES ON TETANUS.

By Drs. N. S. Mayo and W. W. Dimock, Chief and First Assistant, respectively, of the Department of Animal Industry, Republic of Cuba.

As is generally known tetanus is very frequent in Cuba, not only among domestic animals but among human subjects as well. The tetanus bacillus seems to be commonly distributed over the island as well in the cities as in the country. It is probable that the climatic conditions are favorable to the prolongation of the life of the organism and it is possible that the common practice of stabling animals in connection with houses may be an important factor in the frequency of tetanus, at least it is liable to detract from cleanlinesss that is considered so important in its prevention.

The mortality from infantile tetanus caused by umbilical infection was formerly very high, but, owing to the efficient work of the National Sanitary Department in diffusing information

among the common people regarding the origin of tetanus, and supplying antiseptic dressings, the mortality has been greatly reduced. While it is a common thing to see naked children playing about the houses or streets it is rare to see them barefooted, as shoes serves as a protection against wounds of the feet and "hookworm" infection.

Among horses and mules tetanus from wound infection is very common, and it is very important that all wounds be dressed antiseptically. The injection of tetanus antitoxin as a prophylactic following wounds gives excellent results and is used extensively by the American army veterinarians in Cuba. It is probable that the practice of not castrating stallions is due in large measure to the danger from tetanus that follows this operation when performed by the ordinary Cuban method. The common people here recognize two forms of tetanus in animals. Cases that follow wound infection, and another form where there is no apparent wound. The latter is usually in a milder form and is comonly called "moon tetanus" from some mysterious influence of that celestial body that we are unable to explain clearly.

We have treated a number of cases of tetanus that, greatly to the surprise of the natives and sometimes to ourselves, have recovered. The people generally consider tetanus in animals to be a fatal disease. In treating tetanus, we consider it very important to get at the seat of infection by opening the wound freely. If pus exists, we use peroxide of hydrogen freely, then apply a solution of one part of carbolic acid, one part of glycerine and two parts of water, afterward packing the wound with absorbent cotton saturated with a 5 per cent. solution of carbolic acid. We dress the wound twice daily with the 5 per cent. solution. If the wound penetrates the flesh deeply we inject a 5 per cent. solution of carbolic acid near the base of the wound or seat of infection as possible. We also inject 5 c.c. of a solution of one part carbolic acid, one part glycerine and two parts water, beneath the skin of the neck three times daily. We also use antitetanic serum every six hours if we can get it. If the animals can eat we give all the laxative but nutritious food they will eat and all the fresh water they will drink.

The following are brief notes on twenty-two cases treated, as previously indicated:

No. 1. Small Cuban jack—Infected through nail puncture in foot. Symptoms were well marked when animal was brought for treatment. Recovery.

No. 2. American mule (female)—Infected through nail puncture in foot. Nail was not discovered until mule went lame. Four days after removal of nail tetanus developed. Recovery.

No. 3. American mule (male)—Infected through nail wound in foot. Nail removed and turpentine applied. Seven days afterward tetanus developed. Recovery.

No. 4. American mule (male)—Infected through nail puncture in foot. Tetanus developed twenty days after injury. This mule seemed to make a good recovery and was turned out to pasture. Seven days afterward it was found dead in pasture. We think that this case was allowed to go too soon. Recovery from tetanus is slow and if this case had been looked after it would probably have recovered. The owner said that the mule seemed all right. Death may have been due to some other cause.

No. 5. Cuban saddle mule (female)—Evidently infected through saddle galls. In addition to the general treatment hypodermic injections of 5 per cent. carbolic solutions were made about the wound. Recovery.

No. 6. Cuban mare—Nail wound in foot. Treatment recommended. Owner did not report results. Probably died.

No. 7. Cuban saddle mare—Wire cut on foreleg. Treatment recommended. Recovery. This mare aborted in two weeks. In this case the carbolic acid solution was administered by the mouth.

No. 8. Cuban stallion—A short rusty nail was imbedded in the frog and was not discovered until symptoms of tetanus followed. This horse was given six 10 c.c. doses of human tetanus antitoxin in addition to the regular treatment. Recovery.

No. 9. Native ram in advanced stages—This animal was perfectly rigid and could scarcely move a muscle. There was no visible wound. Hypodermic injections of carbolic acid. Died in 36 hours.

No. 10. Cuban mule (male)—Infected through nail wound in foot and was kept at work until it was so stiff it could scarcely move. Treatment recommended. Died in 36 hours.

No. 11. Young native horse—Nine days following castration showed well-marked symptoms of tetanus. This horse was ridden in, a distance of nine miles and back. Treatment recommended. Died.

No. 12. Native ram—This animal presented a peculiar complication of symptoms. It had been bitten by a dog five days

before. Disinfected wound and injected carbolic solution hypodermically. Died.

No. 14. American mule (female)—Infected through nail wound of the foot. This case was seen fourteen days after the injury. The wound had suppurated and the sole and heel had separated from the soft tissues and the symptoms of tetanus were well marked. Sole of foot cut away and regular treatment given. This mule seemed to be in a fair way to recovery, but died on the fifth day.

No. 15. Cuban mare—Mild case of "moon tetanus," that is, there was no visible wound. No treatment recommended. Mare put on pasture. Recovery.

No. 16. Cuban mare, with nail puncture of the foot. Ten days after the nail was removed the owner noticed symptoms of tetanus. Treatment recommended. Mare died in five days.

No. 17. Native horse—Infected through nail wound in foot. Treatment recommended and the animal apparently recovered and was traded, but died in two or three weeks. Cause of death not known.

No. 18. Native stallion—Nail wound of the foot. Treatment recommended. This animal was seen one week after it was first brought to us and was doing as well as could be expected. Several days later death resulted.

No. 19. Cuban stallion—Nine days before the horse had been "fired" for splints and the wounds were inflamed and suppurating. Symptoms of tetanus were developing. Wounds were disinfected and antiseptic pack applied. No other treatment. Recovery.

No. 20. Native ewe in advanced pregnancy—Large lacerated wound on shoulder from bite of dog. Wound treated once, carbolic acid injected and treatment recommended. No report.

No. 21. Native stallion—Castrated February 4th. February 18th the wounds had healed and the horse was put to light work under the saddle. February 25th marked symptoms of tetanus developed and grew worse until the horse was down. Slings were used. The old wounds in the scrotum were opened and solutions of carbolic acid injected into the scrotum and into the surrounding tissues. 125 c.c. of veterinary antitoxin were given in 25 c.c. doses every six hours as well as injections of the strong carbolic solution. Recovery.

No. 22. American saddle horse—Tetanus developed and a nail was found in the foot. In addition to the regular treatment,

100 c.c. of veterinary tetanus antitoxin was given. Recovery.

Of the twenty-two cases here reported ten made a good recovery, seven died and among these were two sheep. Of the five doubtful cases two seemed to have practically recovered, but later died. In those cases where treatment was recommended it must be remembered that whatever treatment was given was by natives, the most of whom could not read or write. We feel that if these cases could have been under our own supervision the results would have been better.

SPINAL MENINGITIS.

By J. G. Willis, D. V. M., Chateaugay, N. Y.

Case 1. September 5, 1907, a horse was driven to my stable a distance of about four miles and I was asked to prescribe treatment. Animal was sweating profusely and nearly exhausted. Owner informed me he had been showing signs of something wrong for some weeks. Horse was about six years old, teeth good, pulse accelerated but regular, and, as far as I could find, no organic difficulty. I concluded it was a case of indigestion and prescribed gentian nux vomica and nitrate of potash together with complete change of diet. Owner was also instructed to give animal bran mashes or other laxative food at least twice weekly and purgative ball of aloes, nux vomica and calomel was given before starting for home.

Five days later I was called to see same animal. He had not shown improvement under treatment given but was apparently in about the same condition, but on this morning was found down in the stable and could not rise. Pulse was regular but soft temperature and respiration normal, some salivation and difficulty in swallowing but animal showed no pain and lay flat as possible with no struggling. Case puzzled me and I gave no diagnosis but prescribed stimulants and gave injection to relieve bowels with no result. Then gave one grain aresoline hydrobromate with no result. Animal became violent soon after and died that night. Post-mortem showed congestion of brain but otherwise viscera was apparently normal.

Case 2. Was called October 12 (about one month later) to same stable. I found a thoroughbred aged mare down and unable to rise. Pulse soft and slow, temperature 100.2, respiration normal.

History of this case was unsatisfactory. Nothing unusual had been noticed until animal found down in the morning. Suspected spinal meningitis and prescribed cold applications to head and heart stimulants internally. She grew rapidly worse and died in less than twenty-four hours.

Post-mortem was more thorough than other case. Found internal organs normal except small abscess in liver. Pronounced cerebral congestion and infusion into ventricles of brain. Post-mortem seemed to confirm diagnosis of meningitis.

Advised owner to disinfect premises thoroughly and to remove other animals from stables for some time. He was also warned to be careful about hay and water used, but I could see no cause for suspecting further trouble from that source.

March 12, 1908, I was again called to same stable. This patient was a valuable Kentucky thoroughbred stallion and had been showing some unusual actions for several days. He had refused food, seemed uneasy and peevish when touched on the loins or hips, while his tail was partly paralyzed.

I immediately prescribed cold applications to head and spine, gave physic ball and ordered 1-2 oz. Pot. iodide three times daily, next day added 3 dr. Pot. nitrate to this powder, and three days after substituted Pot. bromide for the iodide, giving 2 dr. Pot. bromide and 2 dr. Pot. nitrate for four days.

This case exhibited varying symptoms, seemed quite lively at times with periods of dullness and motor paralysis. Pulse was quite normal and temperature slightly above ordinary. Brisk friction over legs and hips was given several times daily and animal fed sparingly on hay with frequent bran mashes. He is now apparently as well as ever and I am inclined to give iodide and bromide of potash credit for bringing about his recovery.

TETANUS.

By J. G. Willis, D. V. M., Chateaugay, N. Y.

Subject—Six-year-old gelding weighing about 1,150 pounds, in good condition.

History—About two weeks before I saw him he had injured outside of right hock slightly by backing against ironwork of a grain seeder. Wound was slight and no attention except usual greasing with gall cure or lard. When I saw the case the nervous

symptoms were pronounced and protrusion of membrana nictitous prominent. Tail was extended, eyes staring, temperature 102 degrees F. Bowels regular and loose and animal ate and drank with little difficulty but considerable salivation. Diagnosed case as tetanus and determined on anti-toxin treatment and ordered ten doses (Mulford's) at once. Placed animal in large, roomy underground stable dimly lighted and began treatment with following powders while awaiting arrival of anti-toxin:

℞ Cupri. Sulph.....
Ferri. Sulph. exic.. āā ..... ℥iss
Bellad. Fol. Pulv.
Gentian Rad..... āā ..... ℥iii

M.—Two tablespoonfuls four times daily in feed. Also gave animal tablespoonful of carbolic acid in each pail of drinking water. Disease was progressing rapidly and trismus was appearing when anti-toxin arrived. As near as could be learned this was eighteen days after injury.

I began treatment with anti-toxin at 7 p. m., injecting 30 c. c. Next morning at 9 a. m. and again at 4 p. m. dose was repeated. This was continued for four days without noticeable change except trismus decreased. On fifth and sixth days only one dose of anti-toxin was given and powders were discontinued. Animal began to improve rapidly and made complete recovery.

Case 2. Subject: Gelding aged about fifteen years, used as a family horse, weighed about 1,100 pounds, in poor condition.

History—Only injury owner remarked was calk wound sustained some three weeks previously in deep snow. Hardly seemed possible infection could have come from that source, but no other external injury observed.

When my attention was called to animal first he was on sleigh eight miles from home. Tail was raised, nictitous protruded, pulse normal and no other suspicious symptoms. Owner said he ate and drank well but showed some unusual fear of his head while eating and while being fed. I told the owner my suspicions and gave him directions to observe animal carefully for a day or two and report. Returned in two days, symptoms little changed but pulse accelerated and owner said nervousness was more pronounced in stable. I advised anti-toxin treatment and injected 30 c. c. first day as in previous case, then twice a day for two days, then once a day, only eight doses being necessary to bring entire recovery. Used carbolic acid in this case also, but

no other treatment. My success in these two cases has given me much confidence in the anti-toxin treatment, but I believe the use of an internal antiseptic is also valuable with local antiseptics to wound when it can be located.

IMPACTION OF THE CŒCUM.

By Dr. H. B. Treman, Rockwell City, Iowa. Reported to the Iowa State Veterinary Association.

I am afraid many of you will be disappointed as I am on the program for a paper, but I only promised to report two cases, and all I have to offer is simply a report of two cases of impaction of the cœcum, which I observed in my practice. My reasons for reporting these cases are twofold. The first is that I think such cases are rare. Dr. Bell said, in an article on intestinal troubles, that he had never been fortunate enough to find a case on post-mortem.

Dr. Law gives this trouble only passing mention, and Dr. Reck, in his excellent and complete little work on equine colics, has nothing particular to say about it.

I have been unable to find anything whatever in any literature at my command in regard to it.

My second reason that I believe with Dr. Reck that the time is now ripe for an attempt at diagnosing these different intestinal disorders and thereby treating them the more intelligently. Our M. D. brothers are doing so with much more accuracy than in former years and why can't we do the same.

In these particular cases I believe I noticed one symptom at least which seemed to me as diagnostic of this particular kind of colic.

Case No. 1.—On June 24th I was called seven miles in the country to see a black draft mare, eleven years old, due to foal early in September.

Upon careful examination I diagnosed what I supposed impaction of the large colon. Treatment was nux vomica and carbonate of ammonia, followed in about one hour by terabinthina, aromatic spirits of ammonia and linseed oil, with one and one-half grains of eserine. In about an hour got a good action on the bowels and recovery. The mare continued well till after foaling, September 19th. September 20th the owner informed

me by telephone to come quick, the mare was in terrible pain and bleeding some. Before my arrival the owner had given two ounces of laudanum and the mare was easier.

I found the temperature 102° F., pulse 80, and respirations somewhat hurried. The bowels had been fairly loose. There was some hæmorrhage from the uterus, which I irrigated with an antiseptic and styptic. I also found the right cornua of the uterus well over to and above the left, which I righted without trouble, and thought I had cured the case.

September 22d almost the identical procedure was gone over. September 23d was called again with the same story, except that hæmorrhage had ceased. The patient was somewhat easier when I arrived, and I could find nothing wrong with the generative organs in any way.

I then decided there must be some bowel trouble, this being the first time I had arrived in time to see the symptoms of pain myself.

I gave three grains of pilocarpine and one and one-fourth grains of eserine, with most elaborate results in less than an hour. The patient got, what the owner called, a good cleaning out.

Nothing more was heard of the patient until September 28th, when I was called as before and told the mare was fairly tearing the stable down.

The owner again gave two ounces of laudanum, in spite of what I had said against it, and still again the patient was eating hay when I arrived. Temperature, pulse and respirations were about normal.

I gave one pint of oil to counteract the effects of the opium and left a few doses of nux vomica to be given.

Everything went well until October 4th, when I was again called in a hurry, but this time the mare was not easy. Instead she was in a state of shock, and within a few minutes was dead.

Upon post-mortem I found the cæcum fully twice its normal size and packed solid with ingesta nearly dry, and a rupture about eight inches long on the lower side about the middle of the organ.

Now the questions in my mind are: Was that mare's sickness on June 24th due to impaction of the cæcum? Was that cœcum in a state of impaction from September 20th until October 4th, the day of her death? I think it was.

Case No. 2.—This case was 12 miles in the country. Was asked to come in a hurry, as usual; the mare was very sick.

Upon my arrival I learned that an imperic from a neighboring town had been called on Tuesday, this being Thursday. This man had been treating the case for inflammation of the bladder, but he had given a large dose of oil which had worked well and the mare had purged considerably.

The patient was in such a state of shock it was dangerous to go near. She was liable to fall any minute. Temperature 107, pulse imperceptible, membranes almost purple, respiration quick and catchy.

Of course I was asked for diagnosis, prognosis, treatment, etc., etc., immediately. My prognosis was death in a very few minutes. For diagnosis all I had was subjective symptoms, the only objective being those of collapse. The symptoms, as I got them from the owner, were dull pains, quite continuous, more or less frequent urination as well as frequent movements from the bowels, especially after the oil took effect.

Death took place within ten minutes after I arrived. Post-mortem revealed almost identically the same condition as found in Case No. 1, except the rupture was larger and more excreta out in the abdominal cavity.

In these two cases there is one symptom that struck me as being characteristic or diagnostic of this particular impaction. That is the characteristic general symptoms of impaction of the large colon, except the more or less regular and full movements of the bowels, which also responded to purgative medication without relieving the impaction or even any of the symptoms in Case No. 2. This we know is not true in a case of impaction of the large colon.

MALLEIN AND THE TUBERCULIN TEST.*

By E. H. Nodyne, V. S.

On May 19th last, as an experiment, I injected two cows with 2 c. c. each of mallein with the following result:

Cow No. 1.

Temperature before Injection 9 P. M.	Temperature after Injection.						
	A. M.	A. M.	A. M.	M.	P. M.	P. M.	P. M.
	6	8	10	12	2	4	6
101.4	105.0	105.4	106.0	106.2	106.6	104.2	103.2

*Report presented to the Genesee Valley Veterinary Medical Association, July 9, 1908, at Rochester, N. Y.

Cow No. 2.

Temperature before Injection 9 P. M.	Temperature after Injection.						
	A. M. 6	A. M. 8	A. M. 10	M. 12	P. M. 2	P. M. 4	P. M. 6
102.4	102.0	101.2	101.4	101.2	101.0	100.2	101.0

On June 23d I subjected cow No. 1 to the tuberculin test, using 2 c. c. tuberculin prepared at the N. Y. State Vet. College. Cow No. 2 in the meantime had been sold and I lost trase of her. Following is the result of tuberculin test on cow No. 1:

Temperature before Injection 9 P. M.	Temperature after Injection.						
	A. M. 8	A. M. 10	A. M. 12	M.	P. M. 2	P. M. 4	P. M. 6
102.2	104.6	105.2	105.2		106.0	105.0	104.8

As will be seen by comparing this with the temperatures after the injection of mallein there was in both instances a positive reaction. I condemned this cow and on June 25 she was slaughtered and on post-mortem examination showed well-marked lesions in post-mediastinal gland and left lung. The gland lesion being about the size of a croquet ball, and that of the lung about the size of a man's hand.

The results of this experiment leads me to doubt many things, and one is whether it is the specific products of the tubercle bacteria that causes the reaction in a tuberculous subject, and if this is so then why will mallein produce the same effect? Is it the close relation of the two bacteria, or would some other foreign matter injected into the system produce the same effect? These and many other questions might be asked and I could not answer them, and I think the subject is one that could be followed up with interest and profit to both practitioners of human and veterinary medicine.

Some of you gentlemen may have experimented some along this line; if so, I should very much like to hear the results obtained.

REMOVAL OF FOREIGN BODY FROM STOMACH OF DOG—RECOVERY.

By Drs. H. T. Gaetz and E. L. Volgenau, Buffalo, N. Y.

A fox terrier while at play swallowed a hollow rubber ball one and one-half inches in diameter. Brought to the writer four days after the occurrence of the accident, the owner stated that the dog had vomited about one hour after every meal since he had swallowed the ball. Gastrotomy was advised and performed on the following day. One hour before the operation the patient received one H.M.C. tablet (Abbott) hypodermically. Less than one drachm of ether was necessary for complete surgical anæsthesia. The abdomen was shaved, scrubbed with bichloride soap and washed with lysol solution, an incision two inches long made into the abdominal cavity and the ball easily located in the stomach. The stomach was drawn through the incision and an opening made large enough to remove the ball after it had been slit in several places to make it collapse. The opening in the stomach was closed by continuous catgut suture in two layers and the abdominal wound by one layer of interrupted silk sutures. The dog received nothing but water in small quantities for three days, after which time feeding was cautiously resumed. Complete recovery in thirteen days.

The writer has used the H. M. C. tablet in fifteen laparotomies in dogs with the greatest satisfaction to himself and with perfect safety to the patient. Only a small quantity of ether is necessary for complete anæsthesia, the animal does not fight the anæsthetic, rests quietly for three or four hours after the operation, has no post-operative nausea and practically no surgical shock.

TUBERCULOSIS IN LIONESS.

By A. G. Coppenbarger, D. V. S., Muskogee, Okla.

On the evening of June 10, 1908, I was summoned by the Parker Amusement Company to see a lioness that had been failing for the past three months. I found the animal stretched out in the cage very much emaciated, respiration decidedly increased, her appetite had gradually been failing her from the time she

was first noticed ailing; for about the last thirty days she would eat sparingly one day and refuse food the next; she also refused milk, which was unusual for her; soon after eating the food in many instances it would be regurgitated. With what little history I had I diagnosed the case indigestion, and prescribed:

June 10, 1908.

℞ Tr. Nux Vomica... } aa j5
Hydrochloric Acid.. }
Bismuth Subnitrate jv5
Liq. Pepsin ij5
Syr. Aurantium, g. s. ad jv5

M. Sig.—Give tablespoonful morning, noon and night.

The medicine was given with a syringe by the attendant getting as near the cage as would be safe and drawing back as though he was going to strike her, when she would open her mouth, thus giving him an opportunity to give the medicine.

On the evening of the 12th I had an opportunity to hold a post-mortem examination, assisted by Dr. Warner Sidener. I was compelled to change my diagnosis to tuberculosis. The lungs were almost completely covered with nodules.

THE establishment of a school of sanitary science and public hygiene at Cornell University is announced.

AT the meeting of the Veterinary Medical Association of New Jersey the Mayor of the Borough of Ramsay, Dr. J. B. Finch, exchanged greetings with Dr. R. T. Churchill, Mayor of the Borough of Secaucus.

BITTEN BY A HORSERADISH.—"And so Smithers died of hydrophobia?"

"Yes; poor chap!"

"How did it happen?"

"He put too much horseradish on his bologna and it bit his tongue."—(*Chicago News.*)

A DUCK OF AN M. D.—Little Elmer—Mamma says you are a duck of a doctor.

Pompous M. D. (greatly pleased)—Indeed! How did she come to say that?

Little Elmer—Oh, she didn't say it just that way, but I heard her tell papa you were a quack.—(*Chicago News.*)

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

VOMITION IN THE HORSE [*Robert Bryden*].—These are the records of three cases where vomiting took place and presented a great similarity in their manifestation. The vomiting occurred several times in succession and in every animal the same position was assumed as it was going to take place. This peculiar position was as follows: At various intervals the animal would stretch his fore legs well out in front, the cervical muscles spasmodically would contract causing the neck to become ewe-like in shape for a moment and then there was immediately following a faint shriek and the forcible ejection of gas and fluid in gesta through the nostrils. Of course, there were also more or less marked symptoms of colics. The two first cases were diagnosed as impaction and overloaded stomach and treated accordingly. The vomiting returned several times but both animals got well comparatively quick. In the third case, however, a diagnosis of rupture of stomach or of the bowels had been made. It proved fatal. However, at the post-mortem the stomach was found entire, and full of foul fluid and injesta similar to that thrown out by the nostrils during the vomition.—(*Veterinary Record.*)

REMOVAL OF THE PLACENTA IN THE MARE. HOW IT SHOULD BE DONE [*C. Cunningham, M. R. C. V. S.*].—The cleansing of a mare may in many cases be an easy job, but yet there may be some condition where one is quite embarrassed. The author has had recourse to a very simple method and although it may be known and commonly used, as he has never seen mention of it, he thought he would just speak of it, leaving to others the task to judge of its value. The process is simply this: "Leave the big bulk and big mass of the white or light colored placenta severely alone, go in search of the dark colored outer surface of the chorion and try by gentle traction of that membrane by itself to effect the end in view." The author relates three cases where he has obtained excellent and very rapid results. Some practitioners may know of this method and yet some may not or may have not put it into practice. Let them try it. To explain and

to illustrate, Mr. Cunningham says: "Called to a big black mare, 16.2 hands high or over, foaled ten hours or so, I found the membranes seemingly so firmly attached that I allowed two or three hours grace, and even then was likely to be nonplussed. Happening to see the dark colored detached margin of the chorion showing just within the labia, I said to myself: 'That is the chorion, the outer fœtal membrane, the outer surface of which is closely applied to and connected with the inner lining membrane of the womb. Some of it got detached and if I pull gently at this detached portion alone and by itself I may succeed in detaching and bringing away the rest of this adhering membrane, and with it the whole placenta.' Acting on these lines, I pulled gently at the dark colored membrane only, found it giving an inch and then two inches, shifted my hold and went round about the detached circumference drawing quietly here and there. Soon the choirion showed as a sort of brownish night-cap, enveloping the whiter parts downward six, twelve, and eighteen inches and nearly two feet, when the force of weight came into play, and the whole mass fell with a flop between the mare's hocks and at my feet."—(*Veterinary Record.*)

HYDRONEPHROSIS IN THE DOMESTIC ANIMALS [*Gerald Leighton, M. D., F. R. S. E.*].—The author has already recorded one case of this trouble associated with congenital absence of the other kidney. He has seen since two other cases, one in a pig and one in a cow. The lesions are described as they were found in one of them, but they were very similar in all. However, in the pig the hydronephrosis was double. In all there were lesions of chronic cystitis. The author considers that the causes that give rise to those conditions may be divided into two groups and those whether being responsible for unilateral or bilateral hydronephrosis can be arranged as follows: As *Unilateral Causes* are those where there is obstruction to the outflow of urine situated above the point of entrance of the ureter into the bladder, such as deformity of ureter, occlusion, contraction, twist, kink, calculus impacted, pressure of pelvic tumour, pelvic scar tissue, uterine displacements, pregnancy. *Causes acting in bilateral hydronephrosis,* those where there is obstruction below the points of entrance of the ureters into the bladder, such as any vesical or urethral obstruction, usually incomplete, calculus in bladder or urethra, enlarged prostate, pressure of tumours, stricture, chronic cystitis.—(*Journ. of Compar. Pathol and Therap.*)

ABSCESS OF THE INTERNAL EAR IN A MULE [*Ferguson Stirling, M. R. C. V. S.*].—A mule said to have had an abscess of the external ear, had the conchal and annular cartilages slit in a fearful manner and the ear was packed by the owner with axle-grease and cotton wool pushed in as far as possible. Shortly after, the animal exhibited serious symptoms. He has lost a great deal of the normal control of his movements and goes along in a peculiar uncertain staggering way. He has the high-stepping action of the sheep suffering with gid, when the parasite is situated near the cerebellum. He soon becomes comatous, and, notwitstanding treatment, dies in ten hours. Blood, pus and axle-grease are found in the middle ear and also in the guttural pouches.—(*Veterinary Journal.*)

SOME CANINE CLINICAL NOTES [*F. Hobday, F. R. C. V. S. and Edgar Belcher, M. R. C. V. S.*].—1st. Malignant tumour. A nine-year-old St. Bernard bitch had a growth on the right knee, which increased rapidly and necessitated amputation, as it was of malignant nature. It was a sarcoma. The dog got well and was comfortable with an artificial leg. Four weeks after she had pneumonia, began to get over that when she presented peculiar symptoms. Having great appetite, and eating one pound of meat every day she kept loosing flesh until she was but "a bag of bones." Soon a nodule appeared in one mammary gland, this enlarged rapidly. And then the bitch had paroxysms of pains when she would cry out as if in great agony. She was destroyed. Sarcomatous growths were found in the lungs and also in the mammary gland.

2d. Carcinoma of the œsophagus in aged fox terrier. He had always been in good health until the time he began to feed poorly and looked dull. Then he vomited occasionally. Gastritis was suspected and he was treated accordingly. The dog kept getting weaker and then presented a swelling about the middle of the throat. Supposed it was a bone. The swelling got as big as a Tangerine orange and made the dog hold his head to the right. Usually snappish to strangers, the dog is now quiet and gave no evidence of pain on pressure over the swelling. There was no salivation, nor bad odor from the mouth. The swelling was irregular, rough and quite movable under the skin. On manipulation it gave the idea of being attached to the œsophagus. Cancerous growth was diagnosed and the dog destroyed. At post-mortem the swelling was found involving some of the vol-

untary muscles and extended to the membrane lining the œsophagus. It was cancerous, no doubt of the squammous-celled variety.

3d. Ascites Followed by Carcinoma of the Pharynx and Cervical Glands.—Skye terrier, 12 years old, had abdominal dropsy and was placed under iodide of potassium. A few months later nine pints of straw-colored fluid are taken off from the abdomen. The dog remains in good health for three months, when he became delicate in his appetite and looked as having sore throat. In that region there is found a subcutaneous movable tumour as big as a chestnut. Carcinoma is suspected and confirmed by the condition of the mucous membrane of the throat examined with the mouth kept open with a speculum. Microscopic examination revealed also the nature of the tumour. —(*Veterinary Journal.*)

Three Cases of Prolapsus of the Bowel; Amputation; Proctopexia [*by the Same*].—In the first case, a piece of the bowel had been excised after first suturing the healthy part to the anal ring. Death occurred after twenty-four hours from gangrene of the bowel.

In the second, the bowel was returned but as it could not be kept in place, notwithstanding cold astringent injections of tannic acid, a purse-string suture was resorted to. Removed after five days, the prolapsus returned and finally the dog died with intestinal complications.

In the third case, the prolapsus was at first easily reduced and remained in place. The animal was sent home. After three days the trouble returned. Again it was reduced but without success. After trying several times and always failing, it was decided to resort to the operation of Gersuney. But this was also followed with a bad result. Then laparatomy was performed and proctopexia carried out with a perfect success. A month after the operation the dog was still in perfect condition and had no difficulty in defecating.—(*Veterinary Journal.*)

FRENCH REVIEW.

By Prof. A. Liautard, M. D., V. M.

Exophthalmia Due to Thrombosis of a Cavernous Sinus in a Horse; Sudden Death [*Baillart, Babb and Grollet*].—A rare case, none similar on record. Stallion of six years, has had

three attacks of severe pneumonia. A month after the last has severe colics which were followed by another two days later. The evening of that day the right eye was swollen, the eye lids are tumefied, closed and painful, the conjunctiva are congested and the cornea is yet transparent. Traumatism is suspected and warm applications of camomile decoction are prescribed. The next day, the animal having refused his food, the right eye is about entirely out of the orbit. It is surrounded with thick swollen conjunctiva. The region is the seat of wide œdema, the sub-orbital fossa has made room to a convexity. The cornea is translucid. The left eye begins to be affected. Suspecting a retro-orbital abscess, an exploring puncture is made but no pus is found. The skin over the seat of the sub-orbital fossa is incised, some adipose tissue of the fossa is removed but no pus is found. Warm lotions are applied. The conditions are worse the next day and the question whether the eye is to be removed or not is put to a consultation. It is decided to wait until the next day. The horse dies suddenly during the evening.

Post-mortem—No pus was found but instead an abundant hemorrhage between the eyes. First stage of meningitis in the anterior region of the brain. The optic nerves are normal at the chiasma, the pituitary gland is congested and as big as a hazel nut. The frontal sinuses contained a certain quantity of fluid. The optic nerve is surrounded with a clot of blood. Perineurium has an hemorrhagic tinct. This hemorrhage comes from the venous branch which unites the sub-sphenoidal confluent to the cavernous sinus, probably the seat of phlebitis, sequelae of the inflammation of the frontal sinus.—(*Rev. de Pathologie Comparee.*)

Open Wound of the Anterior Chamber of the Eye; Recovery With Pulverized Boric Acid [*Lacassagne, Army Veterinarian*].—A horse has the right eye closed, the lids much swollen. The ocular globe is red all over and presents a vertical fissure, about three centimeters in length which is partly closed by a clot of coagulated aqueous humour. There is also escape of a sero-bloody liquid. Ophthalmoscopic examination is not possible, the animal does not see with that eye. After washing the part with tepid salt water, boric acid finely pulverized was insufflated in the eye. Soon abundant lachrimation takes place, accompanied with escape of serosity. In the afternoon the eye is less painful and the animal resists less to a second insufflation. After each of these the membrana nictitans passing over the globe of the eye spreads the acid all over. This treatment was renewed

the next day with three insufflations and kept up for two weeks when the wound of the eye was entirely closed. Some granulations, however, had to be cauterized with nitrate of silver. The animal resumed his work after twenty-six days of treatment with perfect sight and a very slight blemish of the eye.—(*Rec. de Medec. Veter.*)

Treatment of Sero-bloody Collections With Injections of Pure Tincture of Iodine [*M. M. Cadix and Pineau, Army Veterinarians*].—The authors have resorted to that treatment very extensively for tendinous cysts, windgalls and thorough pins as well as for sero-bloody cysts and gatherings. Their modus operandi is as follows: The region situated below the most prominent point of the swelling being well aseptized, a puncture is made with the large needle of the Syringe of Pravaz and about one-third of the liquid contained in the tumour is removed. Then, according to the size of the collection, from one to four grammes of pure tincture of iodine is injected, insuring its thorough dilution and contact with the walls of the cavity by massage. If as it some times occurs, there is an œdematous swelling of some importance round the sero-bloody tumour, before making the injection, an astringent application (clay, carbonate of lime, sulphate of iron and vinegar) is applied over it. Very rapidly after the operation there is a marked increase in the size of the tumour. This remains for six or eight days and then the resorbtion of the liquid begins and is complete in fifteen days or perhaps a little longer if the region is exposed to rubbings. Several cases are recorded where most satisfactory results have been obtained.—(*Rec. de Medec. Veter.*)

Deep Wound of the Foot; Arthritis; Recovery [*Mr. Arnoux*].—Simple record of a rather serious injury that a three-year-old filly received while running out to grass. The horse put her foot on a stump of wood which entered deeply through one of the lateral lacunae of the frog and then broke off, leaving a part of it in the foot. Excessive lameness, of course, followed although the fragments of wood were extracted as well as possible. After a few days the animal was on three legs. The case was evidently one of very severe nature when the author was called. A very deep wound of the foot, an immediate operation is imposed and is at once performed. Little pieces of wood are removed, the small sesamoid bone had to be curetted, the periosteum is diseased, synovia escapes, the second phalangeal joint

is open. Repeated injections of pure oxygenated water are made, the wound cleaned with sublimate solution, dusted with iodoform and a dressing applied. Notwithstanding the severity of the interference, the animal got well and after six weeks could be considered thoroughly cured. However, a week later the lameness returned, a fistulous tract reopened and several pieces of wood were again extracted besides those that escaped with the discharge. A similar result followed an appropriated treatment. But again another abscess formed at the coronet. This was treated again and followed by another and final recovery. The animal had been laid up three months.—(*Recc. de Medec. Veter.*)

EFFECTS OF LIGHTNING ON A FILLY [*Mr. Fafin*].—She was found dead the day after a severe storm. She had fallen in a ditch, at the foot of a tree and had a peculiar position. Seated on her hocks, the hind legs under her abdomen, the fore limbs half flexed, she seemed to be asleep. The neck was slightly bent to the right, and the head resting with her nose on the ground. There was a fine stream of blood oozing from both nostrils. Post-mortem: The skin removed showed the connective tissue and the superficial muscles as being of a red wine color. The muscles look as if they were cooked. Through them in the back was found a piece of the vertebral column which is absolutely loose. Measuring 10 centimeters in length, it is situated a little back of the withers, and is surrounded by a clot of black blood and muscular detritus. The whole of that region looks like an anthrax tumor. Then the electric spark must have divided in several directions. Backwards and downwards it has torn the abdominal muscles, an enormous clot of blood is spread over the large intestine which, however, is not torn. The lungs are mashed in many pieces, the sub-scapular muscles are black. A muscular laceration situated a little in front of the scapula is covered by the skin which presents only a small hole not larger than a pencil. There was also marks of the passage of another spark. In reaching the head it had again divided and one branch had gone and burnt the right parotid, while another had gone to the nostrils, where it lost itself in the earth, as indicated by the position of the head of the animal when it was found in the ditch.—(*Semai. Veter.*)

GASTROTOMY TO EXTRACT FOREIGN BODY FROM THE RUMEN [*M. Leon Baby*].—A fine two-year-old heifer, five months in calf, presents under the abdomen a little back of the sternum, a

sharp piece of iron, which is running through the skin. It is the point of a harnessmaker's punching needle that had been missed for two months, and that the cow had swallowed, 21 centimeters long and carrying a handle which measures three centimeters in diameter, it requires an incision of some dimension to be removed, at the spot where it projects. And as there might be possibility of an eventration and of an extravasation of the intestinal contents into the peritoneum, gastrotomy was resorted to. The left flank disinfected, the rumen exposed and open, the inferior edge is secured to the skin with Pean's forceps and the arm introduced, the foreign body was readily removed. Sutures of the walls of the rumen, then of the parietal peritoneum, of the muscles and finally of the skin ended the operation which was followed by complete recovery in seven days.—(*Progrès Veteri.*)

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

Sudden Death After Reposition of the Prolapsed Uterus [*Dr. Lazanto*].—In the case of a cow which had calved normally, the uterus being prolapsed, it was apparently uninjured, and after a thorough washing and disinfecting, was replaced. A few minutes later, the cow, which was still laying down, looked anxious, began to tremble, became weaker and had an intermitting pulse. Soon muscular spasms and convulsions set in, which announced approaching death. Natural death was averted, the animal was slaughtered. The author is now of the opinion that an air embolism from the uterus was the cause of the severe symptoms mentioned. There was no information obtained as to the result of the postmortem examination.—(*Allatorvosi Lapok*, 1907, *S.* 327.)

The Practical Value of the Opsonic Index.—[*Dr. Saathoff, from the* 11 *Medical Clinic in Munich*].—The main points of Wright's theory with reference to the opsonic power of the blood serum are summed up in the following brief sentences:

First—In the serum of the normal blood elements are present; the opsonines, which affect the invading bacteria to the extent that they are taken up by the leucocytes and eventualy destroyed.

Second—In certain diseases, and particularly in all chronic infections, the resisting power of the blood is lowered against the

bacteria present, which is manifested in a lowering of the opsonic index. Reversely, we can conclude from this that a lowering of the opsonic index indicates the presence of an infection.

Third—As is demonstrated in the foregoing sentences it becomes necessary in the treatment of infectious diseases to raise the opsonic power of the blood. This is accomplished by subcutaneous inoculations of the specific micro-organism in a devitalized condition, whereby specific reacting bodies are formed in the serum of the character of the opsonines which in turn raises the opsonic index.

The author had subsequently verified the results of Wright's experiments relative to the clinical value of this method and appends his conclusions as follows: First, on account of the complex and extremely difficult technique, this method can only be applied in certain institutions where it is possible to maintain an investigator, consequently this detracts considerably from its value. Second, on account of the innumerable sources of error which arise in establishing the opsonic index, the method is applicable only in very rare cases, or where the case at issue is of extreme importance. Third, in its therapeutic application the opsonic index for the reasons just stated is an untrustworthy agent. With regard to the value and further development of active immunization, it remains unconsidered.—(*Münchener Medizin. Wochenschrift,* 55, *Jahr.,* 1908, *No.* 15, *S.* 779.)

THE OPSONINE OF MODERN THERAPEUTICS [*Dr. Piorkowski*]—After describing the technique for the application of Wright's opsonine method in human medicine, which has been successful in many cases in England, but only now is gaining a foothold in Germany, Piorkowski publishes in his laboratory experiments the results of his investigations concerning the opsonines of the specific organisms of swine pest, pneumonia, dysentery of calves. The opsonines correspond in all appearances to the amtroceptors of Ehrlich and are obtained in this way: They are derived from cultures of specific pathogenic organisms which are destroyed at a temperature of 56 degrees C, and are emulsified in a physological salt solution and freed from germs. Naturally an abundant polyvalence predominates as laboratory experiments and experience in practice has proven. For immunizing purposes subcutaneous injections of the extract is sufficient, which is used simultaneously with the specific sera. As a curative agent the bacterial extract alone is sufficient. If the mother animal is inoculated at

the proper time, she transmits immunity to her offspring.—(*Deutsche Tier. Wochenschrift, No.* 11, 1908.)

THE COMPOSITION OF SOME SECRET REMEDIES.—The well known powder (Pondre Uterine de Roux), is a greenish powder composed of the herb artemesia and ruta gravœlens of each 60 grams, inula helenium, 20 grams; camphor and sodium chloride, of each 10 grams.

Birkmore's wound cure is a sulphur borax ointment, colored with indigo blue, and is used extensively in horse and cattle practice.

Bovino contains ground St. John's bread, starch, lentil, millet, rice, corn and various kinds of husks.

Blood meal is composed of dried animal blood and turf mould. It should be mixed with molasses before being used.

Harlem oil consists of 50 grams of oil of turpentine, 35 grams sulphurated linseed oil, 15 grams of sulphur.

Grape nuts are roasted wheat and barley which had previously been slightly malted.

Cattle powder is composed of rad, althaeae, juniperi communis, rad, gentian, sulphate of magnesia, black antimony sem, fœnugreek.

Canine Antipourine or Furunculine is formed of dried yeast cells with a large percentage of potato starch added. Its action is decidedly weakened as a result of drying and is in every way inferior to the fresh yeast cells.

St. Jacobs Balsam represents 27.0 of oil of cacao, 60.0 of oil sesami, 3.0 of phenol, 10.0 oxide of zinc.

Jerusalem Balsam is compound tincture of benzoin.

Balsamic Creasote Liniment is composed of potassium iodide dissolved in Hoffman's balsamic mixture with spirits of lavender added.

Eythymol is a mixture of eucalyptus, thymian, oil peppermint, oil wintergreen and boracic acid in alcohol.

Germicidal soap is a blue soap for disinfecting purposes, containing Berlin blue and iodide of mercury.

Special Food—This food is advertised extensively at the present time and is naturally of American origin. It contains oat hulls, oat bran, wheat bran and barley hulls.

The well known and expensive naphtalan is nothing more than 95 per cent. purified raw naphtha, with 5 per cent. neutral soap added.

Dr. Waites' local painkiller contains cocaine and creosote, dissolved in glycerine and water.

Liquid insecticide contains soap and nicotine in solution and perfumed with oil of melissa.

Mouse-virus is a culture of the bacillus of mouse typhoid grown on nutrient agar.—(*Berliner Tier. Wochenschrift, No.* 20, *May,* 1908.)

THE TREATMENT OF SUMMER SORES [*In the Brussels Annals of March,* 1907].—Prof. Lineaux writes concerning these peculiar sores which appear only in the summer in particular parts of the body and disappear spontaneously toward the end of the year. They are surgically characterized in that they are covered with flesh-like nodes about the size of a millet seed to a pea, with a fibrous wall and containing yellowish, cheesy or calcareous matter. These sores are difficult to heal. The lesions of this nature are also known by the name Dermatitis Granulosa. They reappear the next summer. Their origin is said to be due to the penetration of parasites into the deep tissues of the skin. However, we are not aware of the exact manner of invasion and we believe that the parasite is the larvae of a nematode, the *Filaria irritans.* According to Megnin and others it might be the larva of the *Oxyuris equi* or simply the stings of insects (flies).

Laulanié, and later Huguier, according to the *Revue Veterinaire,* are of the opinion that the sores originate from the subcutis after the eggs of the filaria have gained access to the body with the food. The animals are irritated as a result of the intense itchiness of the wounds during the whole summer, they scratch continuously and soon become emaciated. As a result of the abundant suppuration in the sores this *Filariasis cutanea aestivalis* is very difficult to heal. The principal topical remedies, such as camphor, the iodine preparations and the like are useless, even when deeply injected. Roger, a French military veterinarian, advises surgical procedure, and he further believes we have to deal with the wandering embryos of the oxyuris, which are difficult to reach on account of their being buried deeply in the tissues. According to Lineaux, white arsenic is the ideal remedy, as it reaches the deeper tissues when mixed with equal parts of an inert powder and made into a paste. On account of the continuous wound secretion, the remedy adheres only when the surface is carefully dried before each new dressing is applied. After repeated applications a thin scab forms after

which pruritis disappears and cicatrization begins. During this procedure the sores must be protected by a covering of absorbent cotton and collodion, and the surrounding skin should also be protected from corrosion by the liberal use of vaseline. (According to the *Revue Veterinaire*, Roger cured horses belonging to the Brussels Tram Car Company in a short time by energetic washings of carbolized potassium soap [1-2%] two or three times daily every other day, and afterwards dusting on sublimed sulphur. Internally he administers purgatives and gives in the meantime internally arseniate of iron, which is borne better in large doses than white arsenic).—(*Deutsche Tier Wochenshrift, No.* 27, 1907.)

THE RESULTS OF MODERN INVESTIGATIONS REGARDING CANCER [*Dr. A. Sticker, Berlin*].—The last few years have brought to light many remarkable facts in the domain of cancer research that it is now possible to obtain certain facts concerning the nature and origin of cancer. Sticker discusses briefly the results of the clinical and patho-anatomical investigations and expresses himself more in detail concerning the results of the experimental investigations, concluding his treatise as follows: The most important results of modern cancer research are that histologists, clinicians and experimentors agree that the real nature of cancer is due to a proliferating, parasitical body cell which may reach various parts of the body by metastases from a primary tumor or from exterior sources it may gain access to a body hitherto free from tumors. How one body cell can become parasitic has not been determined by experiment nor by theoretic conception. The assumptions of Sticker that in every case of tumor formation we have to deal with an implantation of cells peculiar in themselves, but foreign to the body. Further, the opinion of V. Leyden-Bergell, who says that the unlimited growth of these cells being due to a lack of hydrolytic-ferment power permits of the origin of cancer being best understood.—(*Zeitschrift für Veterinar Kunde, S.* 427, 1907).

NOTED foreign investigators will attend the Philadelphia meeting.

NEW YORK'S Zoological Park, in the Bronx, contains the largest collection of any park in the world. It has more than 4,000 specimens of beasts, birds and reptiles.

REPORT AND RECOMMENDATIONS REGARDING VETERINARY COLLEGES.*

The Honorable the Secretary of Agriculture:

SIR—The committee appointed by you for the purpose of obtaining information regarding the course of instruction which is now being given at the various veterinary colleges throughout the United States has the honor to submit herewith its report. Recommendations are also made as to the matriculation examination and course of instruction necessary to qualify graduates for admission to the civil-service examination for the position of veterinary inspector in the Bureau of Animal Industry.

RICHARD P. LYMAN, *Chairman,*
Secretary of the American Veterinary Medical Association.
JOSEPH HUGHES,
President of the Chicago Veterinary College.
TAIT BUTLER,
Secretary of the Association of Veterinary Faculties and Examining Boards of North America.
PAUL FISCHER,
State Veterinarian of Ohio.
A. M. FARRINGTON, *Secretary,*
Assistant Chief, Bureau of Animal Industry.

OBJECTS OF INVESTIGATION AND REPORT.

Inasmuch as over 800 veterinarians are employed by the Department of Agriculture in the various kinds of work conducted by the Bureau of Animal Industry, it is of the utmost importance that these men be well equipped by thorough education to fill such positions of responsibility. Although it is understood that applicants for these places must not only pass a civil-service examination but be graduates of veterinary colleges having a course of three years, observation has shown that the standard of attainment in the various veterinary colleges is not uniform, and that veterinary graduates are not in all cases properly qualified for the positions they are expected to fill. It was therefore deemed advisable to seek to improve, if possible, the course of instruction given at these colleges, and, at the suggestion of Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, the Secretary of Agriculture appointed a committee of five reputable veterinarians to visit the veterinary colleges throughout the United States in

* Bureau of Animal Industry Circular 133, issued July 6, 1908.

order to gain definite information regarding their equipment and facilities for teaching, and also to indicate to the Department the necessary matriculation examination and course of instruction to qualify graduates for admission to the civil-service examination.

ORGANIZATION AND PROCEDURE OF THE COMMITTEE.

In accordance with these instructions the above-mentioned Committee on Veterinary Education, composed of Dr. Richard P. Lyman, secretary of the American Veterinary Medical Association; Dr. Joseph Hughes, president of the Chicago Veterinary College; Dr. Tait Butler, secretary of the Association of Veterinary Faculties and Examining Boards of North America; Dr. Paul Fischer, state veterinarian of Ohio, and Dr. A. M. Farrington, Assistant Chief of the Bureau of Animal Industry, assembled at the Palmer House, Chicago, Ill., on February 27, 1908, and organized with the selection of Dr. Lyman as chairman and Dr. Farrington secretary. The first business receiving attention was to formulate a definite plan whereby the desired information regarding each college might be obtained. The committee decided upon the method of procedure outlined under the eleven heads following:

1. Secure all published information; (a) catalogues, (b) advertising, (c) blank forms or other printed matter used in instruction or other college work.
2. Name of veterinary institution; (a) charter.
3. Location; street; place or places where instruction is given.
4. Date of organization; history.
5. Requirements for entrance:
    (a) Standard of matriculation.
    (b) Dates of holding matriculation examinations.
    (c) Latest dates students are admitted after opening of regular session.
    (d) Basis on which students are admitted from other schools:
        1. Veterinary.
        2. Medical.
        3. Dental.
        4. Pharmaceutical.
        5. Agricultural.
    (e) Number of students now in attendance from such schools.
    (f) Name of schools or colleges from which admitted.
    (g) Total enrollment by classes.
6. Teachers and lecturers; their history, and the subjects they teach.
7. Curriculum:
    (a) Obtain a list of subjects embraced in curriculum.
    (b) Number of hours devoted to each subject, and how taught.
    (c) Laboratory.
    (d) Clinics.
    (e) Lectures.
    (f) Recitations.

8. Length of course:
   (a) In years.
   (b) Time each year.
   (c) Amount of teaching during day and during evening.
   (d) As to grading of course.
   (e) Length of sessions for each class.
   (f) Number of days teaching each week.
   (g) Number of teaching hours each day.
   (h) Frequency of roll call.
   (i) Length of vacation and number of holidays during the year.

9. Examinations and graduation:
   (a) Frequency of examinations.
   (b) Basis on which diploma is given.
   (c) Manner of conducting final examinations:
      1. Oral.
      2. Written.
      3. Practical.
   (d) Percentage of senior students failing to pass final examinations.

10. Diplomas and certificates:
   (a) Kinds of degrees, certificates, or diplomas issued.
   (b) As to a post-graduate or other kind of special course.
   (c) Dates on which diplomas are issued.

11. Sources of revenue:
   (a) Fees from students for each course of study.
   (b) Endowment.
   (c) Annual appropriations.

In addition to the above the following list of questions was formulated to be left with the dean of each college, and later to be filled out and forwarded to the committee:

1. Give a list of the subjects embraced in the curriculum of your college.

2. Give the number of hours spent in lectures by the freshmen, juniors and seniors on each subject in each class during each session.

3. Give the number of laboratory hours spent by the freshmen, juniors and seniors on each subject in each class during each session.

4. Give the number of clinical hours given to the freshmen, juniors and seniors in each subject in each class during each session.

5. Give the names of veterinary, medical, dental, pharmaceutical, and agricultural graduates or students who have been admitted to your college during the past session from other colleges and who have been given credit or allowance at your school; also give the names of colleges from which they have been admitted and the amount of credit which they have been given; also state at what period of the session they have been received into your college.

6. Give list of students who left your college last session, 1906-7, without completing the course or without credentials; also give a list of the students who have left your college this session, 1907-8, without completing the course and without credentials.

7. Give a full list of the students enrolled in the (1) freshman, (2) junior, and (3) senior classes during the present collegiate year.

COLLEGES VISITED.

An itinerary for visiting the various colleges was next arranged and carried out as follows:

The committee began its investigation with the McKillip Veterinary College, 1639 Wabash avenue, Chicago, Ill., on February 28, 1908, and the Chicago Veterinary College, 2537 State street, in the same city, on February 29, 1908. Visits to colleges in other cities were then made in the following order: Grand Rapids Veterinary College, Grand Rapids, Mich., March 2, 1908; Cincinnati Veterinary College, Cincinnati, Ohio, March 3, 1908; Ohio State University, College of Veterinary Medicine, Columbus, Ohio, March 4, 1908; Indiana Veterinary College, Indianapolis, Ind., March 5, 1908; St. Joseph Veterinary College, St. Joseph, Mo., March 7, 1908; Western Veterinary College, Kansas City, Mo., March 9, 1908; Kansas City Veterinary College, Kansas City, Mo., March 10, 1908.

At this time one member of the committee returned home, the others proceeding to the Kansas State Agricultural College, Veterinary Department, Manhattan, Kan., reaching that college on March 11, 1908. At this place another member of the committee returned to his home, leaving the remaining three members to visit the Colorado State Agricultural College, Veterinary Department, Fort Collins, Colo., March 13, 1908; the San Francisco Veterinary College, San Francisco, Cal., March 17, 1908; the State College of Washington, Veterinary Department, Pullman, Wash., March 21, 1908, and the Iowa State College, Veterinary Department, Ames Iowa, March 25, 1908.

The sub-committee of three members designated to visit the eastern veterinary colleges convened in New York on April 11, 1908, visiting the New York American Veterinary College, New York, N. Y., on that day. Following this the New York State Veterinary College, Ithaca, N. Y., was visited on April 13, 1908; the Ontario Veterinary College, Toronto, Canada, April 15, 1908; the University of Pennsylvania, Veterinary Department, Philadelphia, Pa., April 17, 1908, and the United States College of Veterinary Surgeons, Washington, D. C., April 21, 1908.

A report embodying the information obtained from each college as to the manner in which it is conducted is filed as an appendix. This is arranged in a series of exhibits, one for each college, in which are set forth the criticisms of the committee upon the conditions found. It is suggested that these findings be

sent to the colleges named, in order that they may conform to the recommendations made by this committee.

The entire committee reconvened at the Department of Agriculture, Washington, D. C., April 20, 1908, and concluded its duties by submitting the recommendations next following, in which is specified the minimum course of instruction which it considers necessary that veterinary graduates eligible for the position of veterinary inspector in the Government service should receive; also recommendations regarding methods of teaching, etc.

RECOMMENDATIONS.

Entrance Examination.

RECOMMENDATION NO. 1—*Matriculation.*—That a matriculation examination be adopted, the minimum requirements of which shall be equivalent to the second-grade examination as published in the United States Civil Service Manual of Examinations, supplemented by United States history and geography of the United States and its possessions. Such an examination will therefore include:

1. Spelling.
2. Arithmetic.
3. Letter writing.
4. Penmanship.
5. Copying from plain copy.
6. United States history.
7. Geography of the United States and its possessions.

RECOMMENDATION NO. 2—*Dates of holding matriculation examinations.*—That the entrance examination shall be conducted on one or more specifically advertised dates under the supervision of the dean, director, or, in case of state institutions, by the official examining board. That the last entrance examination shall be held not later than fifteen days subsequent to the advertised annual opening of the college year, and no time credit shall be allowed to students admitted after that date.

RECOMMENDATION NO. 3—*Filing of matriculation examination papers.*—That the questions and answers of both successful and unsuccessful applicants shall be kept on file by the institution for at least five years subsequent to the examination of the applicants.

RECOMMENDATION NO. 4—*Grading of matriculation examination papers.*—That applicants shall be graded upon a basis of 100 per cent., and that a grade of not less than 70 per cent. shall qualify for admission.

Course of Study.

RECOMMENDATION No 5—*Subjects constituting course of instruction.*—That the appended list of subjects constitute the course of instruction recommended as a minimum for veterinary colleges. Those numerically indicated shall be known as the major subjects, and those designated by letters shall be under the control of the professors in charge of the respective major subjects with which they are grouped.

1. Anatomy:
   - (a) Histology (veterinary).
   - (b) Zoology (veterinary).
   - (c) Embryology.
2. Physiology:
   - (a) Principles of nutrition.
   - (b) Hygiene.
   - (c) Animal locomotion.
3. Zootechnics:
   - (a) Breeds and breeding.
   - (b) Judging.
   - (c) Feeds and feeding.
   - (d) Dairy inspection.
   - (e) Jurisprudence.
4. Chemistry:
   - (a) Elementary physics.
   - (b) Physiological chemistry—analysis of milk, urine, etc.
5. Materia medica:
   - (a) Botany (medical).
   - (b) Pharmacology.
   - (c) Toxicology.
6. Pathology:
   - (a) Bacteriology.
   - (b) Parasitology.
   - (c) Post-mortem examination.
   - (d) Meat inspection.
   - (e) Laboratory diagnosis.
7. Practice of comparative medicine:
   - (a) Diagnostic methods and clinics.
   - (b) Therapeutics.
   - (c) Control of infective diseases.
8. Surgery:
   - (a) Surgical diagnosis and clinics.
   - (b) Surgical restraint.
   - (c) Soundness.
   - (d) Lameness.
   - (e) Shoeing and balancing.
   - (f) Dentistry.
   - (g) Obstetrics.

RECOMMENDATION No 6—*Length of course.*—That the course of instruction shall cover a period of three years of not less than six months in each year, exclusive of final examinations

and holidays; and that this course of instruction shall have as a minimum 150 days in each year of actual teaching and a minimum of 3,200 actual teaching hours for the entire three years.

RECOMMENDATION No. 7—*Minimum number of hours in course:*

Anatomy, major subject:		
Lectures	200	
Laboratory	300	
Total		500
Histology:		
Lectures	40	
Laboratory	100	
Total		140
Embryology:		
Lectures	10	
Laboratory	20	
Total		30
Zoology:		
Lectures	20	
Laboratory	20	
Total		40
Total for subject		710
Physiology, major subject:		
Lectures	80	
Laboratory	20	
Total		100
Principles of nutrition	10	
Hygiene	10	
Animal locomotion	5	
Total		25
Total for subject		125
Zootechnics, major subject:		
Breeds and breeding		30
Judging		30
Feeds and feeding		30
Dairy inspection		10
Jurisprudence		10
Total for subject		110
Chemistry, major subject:		
Lectures	50	
Laboratory	150	
Total		200

Physics (elementary)		20
Physiological chemistry:		
Urine analysis	10	
Milk analysis	10	
Total		20
Total for subject		240
Materia Medica, major subject:		
Lectures		70
Pharmacology, lectures and laboratory		50
Botany		30
Toxicology		10
Total for subject		160
Pathology, major subject:		
Lectures	40	
Laboratory	100	
Total		140
Bacteriology:		
Lectures	20	
Laboratory	90	
Total		110
Parasitology:		
Lectures	50	
Laboratory	10	
Total		60
Post-mortem examination		10
Meat inspection		50
Laboratory diagnosis		50
Total for subject		420
Practice of Comparative Medicine, major subject:		
Lectures		250
Diagnostic methods and clinics		400
Therapeutics		100
Control of infective diseases		25
Total for subject		775
Surgery, major subject:		
Lectures	100	
Surgical exercises	80	
Total		180
Surgical diagnosis and clinics		300
Surgical restraint		30
Soundness		20
Lameness		50
Shoeing and balancing		10
Dentistry (lectures)		20
Obstetrics		50
Total for subject		660

Recapitulation.

Total hours for Anatomy group	710
Total hours for Physiology group	125
Total hours for Zootechnics	110
Total hours for Chemistry group	240
Total hours for Materia Medica group	160
Total hours for Pathology group	420
Total hours for Practice of Comparative Medicine group	775
Total hours for Surgery group	660
Total hours, three-year course	3,200

RECOMMENDATION No. 8—*Grading of course.*—That the course shall be graded in such manner as to avoid unnecessary repetition of lectures or instruction to the same student. For example, a student, while freshman, should be required to complete a definitely outlined course in such subjects as anatomy, histology, chemistry, etc. When advanced to the junior class he should either drop the studies of his freshman year and take up new work, or he may continue the same subject; for example, anatomy, along advanced lines of instruction.

RECOMMENDATION No. 9—*Night classes.*—That the practice of certain veterinary colleges in conducting regularly scheduled classes of instruction at night for all or a part of their students, to the exclusion of or in lieu of work which could be better done during the day, is inimical to the best educational work, and therefore should be discontinued.

Faculty.

RECOMMENDATION No. 10—*Number of veterinarians.*—That there shall be at least five qualified veterinarians on the faculty of every veterinary college, each of whom shall have had not less than three years' experience in teaching or in practicing veterinary science subsequent to graduation from a veterinary college.

RECOMMENDATION No. 11—*Qualification of teaching veterinarians.*—That not more than three of the five veterinarians on each college faculty shall be graduates of any one veterinary college.

RECOMMENDATION No. 12—*Subjects taught by veterinarians.*—That five veterinarians on the faculty of each veterinary college shall have charge of and teach the following major subjects: 1, Anatomy; 2, Pathology; 3, Practice of Comparative Medicine; 4, Surgery, and 5, Materia Medica or Physiology, as the respective colleges may elect.

General Recommendations.

RECOMMENDATION No. 13—*Classification of veterinary colleges.*—That the following classification of veterinary colleges be adopted:

Class A:[a]

Chicago Veterinary College.
Indiana Veterinary College.
Iowa State College, Veterinary Department.
Kansas City Veterinary College.
Kansas State Agricultural College, Veterinary Department.
New York-American Veterinary College.
New York State Veterinary College.
Ohio State University, College of Veterinary Medicine.
San Francisco Veterinary College.
State College of Washington, Veterinary Department.
University of Pennsylvania, Veterinary Department.

Class B:[b]

Cincinnati Veterinary College.
Grand Rapids Veterinary College.
McKillip Veterinary College.
United States College of Veterinary Surgeons.

Class C:[c]

Colorado State College of Agriculture and the Mechanic Arts, Veterinary Department.
Ontario Veterinary College.
St. Joseph Veterinary College.
Western Veterinary College.

RECOMMENDATION No. 14—*Evidence of attendance.*—That at the end of the college year each student is entitled to and shall receive a written statement giving the length of time spent in each study during the session, and the grade received therein.

[a] Colleges whose graduates are recommended in this report as eligible to United States civil service examination for veterinary inspectors in the Bureau of Animal Industry.

[b] Colleges whose graduates have been allowed to take the United States civil service examination subsequent to 1898, but are not recommended in this report.

[c] Colleges having no graduates or whose recent graduates are not eligible to the United States civil service examination, and are not recommended in this report.

This statement, or definite evidence of credit, shall be exacted from a student before he is given advanced standing in any veterinary college.

RECOMMENDATION No. 15—*Transfer of students.*—That a student transferring from one veterinary college in Class A to another in Class A shall be given credit only for such time and courses (lectures and laboratory) as he has successfully completed in the institution previously attended. That no college in Class A shall give credit to any student for any work done at colleges in Classes B and C.

RECOMMENDATION No. 16—*Supervision of veterinary colleges.*—That the Department of Agriculture maintain such constant supervision of the work of the veterinary colleges as shall enable it to secure the requisite information to determine whether said colleges are faithfully complying with the minimum standard of requirements indicated in this report.

RECOMMENDATION No. 17—*To secure recognition.*—That those colleges not now included in Class A shall be put in that class at such time as they shall submit sufficient evidence to convince the Department of Agriculture that they are fully and faithfully complying with the minimum standard of requirements indicated in this report.

RECOMMENDATION No. 18—*Certificate of matriculation examination.*—That any person applying for admittance to the freshman class or for advanced standing must present before being enrolled a certificate showing that he has passed the matriculation examination recommended in this report, and in no case shall he be admitted without such certificate.

RECOMMENDATION No. 19—*Applicants from colleges not veterinary.*—That an applicant who has successfully completed at least two years' work in a reputable college of human medicine, dentistry, pharmacy, or agriculture, and who brings an official and explicit certificate describing his course of study and scholarship, and also a certificate of honorable dismissal, shall not be admitted to advanced classes or standing in veterinary colleges, but may be given credit for such subjects as have been successfully completed in such colleges if, in the subjects for which credit is sought, said colleges maintain a standard of instruction similar and equal to the minimum standard of requirements recommended in this report.

RECOMMENDATION No. 20—*Agricultural college graduates.*—That a graduate of the regular four-year agricultural course in an agricultural college having upon its faculty a qualified veterinarian giving a regular course of instruction in veterinary science may be given a time credit of one year, but shall be given credit only for such subjects as he has successfully completed, providing the course of instruction in said agricultural college, in the subjects for which credit is sought, is similar and equal to the minimum standard of requirements in the course indicated in this report.

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RECOMMENDATION No. 21—*One graduation period only.*—That no veterinary college shall have more than one graduation period yearly, nor shall diplomas be issued except at the close of the regular college year.

RECOMMENDATION No. 22—*Requirements for graduation.*—1. That a candidate for graduation shall have attained the age of 21 years and attended three full college years in a veterinary college in Class A (except as otherwise provided in Recommendations Nos. 20 and 25); the last year of attendance must have been at the college to which he applies for graduation.

2. He must have successfully completed the course of study and passed all the final examinations in the subjects indicated in this report.

3. If he fails to pass satisfactorily in subjects representing in time 25 per cent. or more of his senior year, these subjects must again be taken in full with a succeeding class before he can graduate.

RECOMMENDATION No. 23—*Information for Department of Agriculture.*—1. That all veterinary colleges shall promptly furnish to the Department of Agriculture a copy of their annual announcements and of all other publications relative to the courses of instruction offered.

2. They shall also furnish, not later than thirty days after the opening of the first session of each college year, a complete list of their matriculates by classes, and within ten days after the close of the college year furnish a complete list of the last graduating class.

United States Civil-Service Examination for Veterinary Inspector.

RECOMMENDATION No. 24—*Eligibility for United States civil-service examination.*—That graduates of the veterinary col-

leges in Class A be at all times eligible for the United States civil-service examination for employment as veterinary inspectors in the Bureau of Animal Industry.

RECOMMENDATION No. 25—*Eligibility of graduates of Class B colleges.*—That any person now (June 1, 1908) a matriculate of a veterinary college in Class B shall be eligible to the civil-service examination for veterinary inspector in the Department of Agriculture after having completed a full course of study of three years and graduated from any veterinary college in Class B.

RECOMMENDATION No. 26—*Not eligible to civil service.*—That hereafter no undergraduate or other person who has not received a diploma from a veterinary college shall be permitted to take the civil-service examination for the position of veterinary inspector.

[Cir. 133]

Date When Recommendations Take Effect.

RECOMMENDATION No. 27—*Date to take effect.*—That, except as otherwise provided for, the recommendations in this report shall become operative for each institution not later than the close of its college year 1908-9.

Approved:

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., June 8, 1908.

[Cir. 133]

GROUND has been broken at the New York State Veterinary College for a new operating room for the Department of Surgery.

THE semi-annual meeting of the Connecticut Veterinary Medical Association takes place at New Haven on the 4th inst.

"THE enclosed subscription makes my twenty-first annual remittance. That the REVIEW is of great benefit to me is putting it mildly."—[*J. A. Dresback, V.S., Ex-Mayor of the City of Stanberry, Mo.*]

THE COWSLIP.—"I saw a cowslip by the river's brim," said the long-haired boarder who had just returned from a stroll.

"I hope 'twan't one of my cows," said the practical farmer. "Did she slip clear in?"

CORRESPONDENCE.

LOCO-WEED POISONING AND BARIUM SALTS.

CHICAGO, Ill., July 24, 1908.

Editors American Veterinary Review:

GENTLEMEN:—On page 334 of the June number of the REVIEW you publish a clipping from the *Journal of the American Medical Association* detailing the recent fortunate discovery of the fact that it is the inorganic constituents of the plants *Aragallus lamberti* and *Astragallus mollissimus*, especially barium salts, which cause loco poisoning of cattle and horses. Your very numerous readers in the mountainous west, in the semi-arid plains and near the Cascade range of the great northwest will wish further information, in the way of citation of practical points brought out in the investigation of special interest to veterinarians, and the means of getting their hands upon the publications where the facts are recorded. It may also be apropos to give credit to veterinary workers in the field of bio-chemistry and among poisonous plants destructive to live stock.

For many years stockmen of the plains east of the Rockies, in the valleys among the mountains and in our northwestern limits—in such States as Colorado, Utah, Montana, Wyoming, Oregon and Washington—have, in the aggregate, lost many millions of dollars in the death of cattle and horses from loco poisoning. There have not been wanting veterinarians, like Dr. George H. Glover, of Fort Collins, Colo., in his "Larkspur and Other Poisonous Plants" (Bulletin 113, of the Colorado Agricultural Experiment Station), and like Dr. Sofus B. Nelson, in his "Feeding Wild Plants to Sheep" (Bulletin 73, Washington Agricultural Experiment Station), to study certain plants poisonous or noxious to domestic animals. They and others not of our profession, like E. V. Wilcox, recently veterinary editor of Experiment Station Records for the United States Government, and translator of Ostertag, have collected, studied and catalogued plants poisonous to our animals and published results in experiment station bulletins or elsewhere. Just what the poisonous principles were was not related, as a rule, though it is something to be able to trace the poisonous effects in the animals to definite

plants. Veterinarians have known for many a year the toxic results of the constant administration of barium salts in veterinary practice, especially the profound results of the solution of the salts, however the dose be given, upon peristalsis, upon the respiratory centres, and upon muscular co-ordination. Quite recently, indeed, Drs. W. E. Frink and H. B. Tillou, under direction of Dr. P. A. Fish, in N. Y. State Veterinary College Laboratory, have undertaken a study of the effects of barium chloride upon horses, cattle and dogs, and reported their findings in "Abstracts of Work Done in the Laboratory of Veterinary Physiology and Pharmacology," No. 6, Ithaca, N. Y., a publication which, for six consecutive years has reported many important original researches in this particular field. The surprising thing is that we have always thought that the toxic effects of the particular plants in the West which make the ox and horse crazy, that is, loco them, were brought about by organic poisons, rather than inorganic. Though we are ready to believe, with Crawford, that the constant absorption of small quantities of barium salts, set free in the stomach when the digestive ferments have operated upon the masticated plants, will, cumulative as the drug is, produce just the results which have verisimilitude to loco-weed poisoning.

Happily, in the Bureau of Plant Industry, United States Department of Agriculture, there is a laboratory, that of Poisonous Plant Investigations, devoted to physiologic and pharmacologic researches into the noxiousness or deadliness of such plants when eaten by man or beast. Through the courtesy of Rodney A. True, physiologist in charge of that laboratory, we have been supplied with a copy of Bulletin No. 121 of that bureau, issued April 18, 1908, containing, besides a new and important study of "Mountain Laurel," a plant which is terribly destructive to goats, sheep, horses and cattle that browse upon it, done by Albert C. Crawford, Pharmacologist, Poisonous Plant Investigations, but, additionally, "Laboratory Work on Loco Weed Investigations," by the same author, and "Results of Loco-Weed Investigations in the Field," by C. Dwight Marsh, Expert, Poisonous Plant Investigations, which are the papers referred to in the clipping from the *Journal of the American Medical Association* quoted in the June number of the REVIEW.*

* Persons desiring copies should apply to their Senators or Congressman for Bulletin No. 121, Bureau of Plant Industry U. S. Dept. of Agriculture, issued April 18, 1908, entitled "Miscellaneous Papers;" or they may send fifteen (15) cents to the Superintendent of Documents, Public Printing Office, Washington, D. C., and procure a copy.

The investigation of loco-weed poisoning had a two-fold aspect, first, that in the field; second, that in the laboratory. The field work, as we have said, was done by C. Dwight Marsh, Government Expert in Poisonous Plant Investigations; the laboratory work was done by Alfred C. Crawford, Government Pharmacologist, Poisonous Plant Investigations. We may, therefore, for the information of veterinarians in general, summarize the results obtained, all of which, both field and laboratory, are important to the science.

The first thing to do in the field investigations was to demonstrate, beyond cavil, whether the loco-weeds, *Aragallus lamberti* and *Astragalus mollissimus,* did or did not cause the disease, and this was proven unquestionably, in the season 1905, when it was clearly shown that *Aragallus lamberti* would poison sheep and cattle and that *Astragalus mollissimus* would poison horses.

In the second season, 1906, a study was made of the symptoms and pathological changes in the tissues. The symptomatic knowledge of veterinarians and stockmen was corroborated, namely, that animals eating these plants give the following picture: Lowered head, rough coat, slow, staggering gait, movements showing lack of muscular co-ordination, paralytic symptoms, generally deranged nervous system, emaciation. The pathological appearances are pronounced anæmia of the whole system, diseased stomach walls, in acute cases congestion of the stomach walls, while in chronic cases ulcers are seen therein. Locoed cattle are apt to have ulcers in the abomasum. There is hydrothorax and ascites, effusion into the epidural space of the spinal cord, particularly a gelatinous mass in the lumbar region of the epidura and at the points of exit of the sympathetic nerves.

The third season, 1907, was given to devising remedial measures, namely, attempts to eradicate the weeds and cure the animals. There is no way of ridding the ranges of the two weeds, though both are killed when pastures are fenced. Cattle may be cured by preventing them from eating the weeds, providing them with nutritious but laxative diet and administering strychnine. Horses should be treated the same way, except that Fowler's solution should be administered instead of strychnine. Epsom salts, Crawford adds, should be given to form the insoluble and innocuous barium sulphate.

All this information is well and good. But the information obtained by Crawford in the laboratory sheds light never before

known on land or sea. It constitutes an original contribution to our knowledge of poisonous principles in forage plants, or rather plants which animals should not be allowed as feed, and which cause havoc among our flocks and herds.

Some of Crawford's determinations are as follows:

1. The symptoms described in stock on the range poisoned by loco-weeds, particularly *Astragalus mollissimus* and *Aragallus lamberti,* can be reproduced in rabbits by feeding them extracts of these plants.

2. The production of chronic symptoms in rabbits is a crucial test of the pharmacological activity of these plants.

3. It is the inorganic constituents, especially barium, which are responsible for the poisonous action, at least in the plants collected at Hugo, Col., but perhaps in the future loco plants from other portions of the country may be found to have other poisonous principles.

4. There is a close analogy between the clinical symptoms and pathological findings in barium poisoning and those resulting from feeding extracts of certain of these plants.

5. In drying certain loco plants the barium apparently is rendered insoluble, *so that it is not extracted by digestion with the digestive ferments.* To be poisonous the barium must be in such a form that it *can be absorbed in the gastro-intestinal tract.*

6. In deciding whether plants are poisonous it is desirable to test not merely the aqueous or alcoholic extracts, but also the extracts obtained by digesting these plants with the ferments which occur in the gastro-intestinal tract.

7. It is important that the *ash of plants,* especially of those grown on our uncultivated lands, or on our unirrigated plains, be *examined for various metals.* (The author here evidently refers to those metals the compounds of which are known to be poisonous—such as silver, mercury, arsenic, barium, lead.)

The important results obtained by Dr. Crawford in his laboratory studies open up, as through a vista, at least one course investigations on poisonous forage will take in the immediate future. That loco poisoning appears to be barium poisoning will tend to lead to an awakening, or, to use the luminous French word, an eclairisement, among veterinary pharmacologists. Aristotle, in his sententious and laconic way, said: "The unexpected always happens." We thought abstruse and complex organic compounds were accountable for loco poisoning, whereas the simple technique of work in inorganic chemistry of the sub-

freshman years could have taught us better. The humblest truths, the most useful facts, are commonly not to be sought lost in our cerebral convolutions or gyres, but very close at hand, very near the ground. At the same time Crawford's results and his methods point out to us clearly one of the weaknesses in our veterinary curricula—the omission of courses on botany, especially in its relations to poisonous plants destructive to live stock, general and laboratory courses on toxicology, bio-chemistry, physiological chemistry, organic chemistry. If we do not have these, how are we to undertake successfuly investigations such as these which Crawford and his associates undertook in the West—for it may yet be found that many of the toxins in noxious plants destructive to stock are of *organic* origin—and that which Haywood conducted in the Montana smelter poisonings? If we are not good toxicologists we will have to leave these toxicological investigations to men like Crawford and Haywood, while we are laughed at as blockheads. We can only cope with these questions by being grounded in the group of botanical and chemical studies mentioned. Merely the learned number—the deadwood—of those sciences will not do at all. Bookish trumpery is all right in its place. What we need is to be able to discover and to speak authoritatively like Crawford and Haywood. And this can only be done when we can work with theirs or similar tools.

D. Arthur Hughes, Ph.D., D.V.M.

Preliminary Understandings.—Counsel (to witness): Now, allow me to remind you of what happened to Balaam.

Witness: Certainly; but allow me to remind you that it was the ass that warned him.—*Tit-Bits.*

Reading a Horse's Face.—Every horse carries an index to his temper and intelligence in his face. The teachable, tractable animal is broad and flat between the eyes; the bony ridge of his face dishes slightly from the point where the face narrows toward the nostrils. His ears are well set, sensitive and far apart, with a well defined ridge of bone extending across the top of the head between them. Always feel for this ridge in judging a horse. The eye should be large, clear and bright, with a prominent ridge of bone along the inner and upper edge of the socket.—*London Answers.*

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

FORTY-FIFTH ANNUAL MEETING AT PHILADELPHIA, PA., SEPTEMBER 8, 9, 10, 11, 1908.

Headquarters and Hotel Arrangements.—The headquarters of the association will be at the Hotel Walton, corner Broad and Locust streets. This hotel is about five minutes' walk from

HEADQUARTER'S OF A. V. M. A.

Hotel Walton, cor. Broad and Locust Streets.

both the Pennsylvania and Reading depots, and about ten minutes' ride from the Baltimore & Ohio station. The Walton offers the following rates: Single rooms without bath, one person,

$1.50, $2.00 and up, and with bath $2.50, $3.00 and up per day; double rooms without bath, two persons, $2.50, $3.00 and up, and with bath $3.50, $4.00 and up per day.

Other Hotels.—The Hotel Normandie, Thirty-sixth and Chestnut streets, is within five minutes' walk of Houston Hall and close to the West Philadelphia station of the Pennsylvania Railroad. This hotel offers rates on the American plan at $3.00 and $3.50 per day; European plan, $1.00 and $1.50 per day.

The Hotel Majestic, Broad street, corner Girard avenue, one of the most attractive hotels in the city, offers rates of $2.00 each in a room, with a bath, two in a room, in any suite vacant at the time of the meeting. Meals both on the American and European plan.

The Hotel Windsor, 1217 Filbert street, within easy walking distance of the Pennsylvania Railroad depot and Reading Terminal, gives rates, European plan, $1.00 and up per day; American plan, $2.50 and up per day.

The Bellevue-Stratford quotes the following rates: Single rooms, without bath, $2.00 per day, and with bath, $3.00 per day; double rooms, without bath, $3.00 per day, and with bath, $4.00 per day.

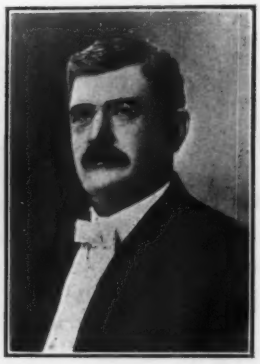
Place of Meeting.—The sessions will be held in the auditorium of Houston Hall, at the University of Pennsylvania, corner Thirty-sixth and Spruce streets.

OFFICERS AND COMMITTEES, 1907-08.

President—W. H. Dalrymple, Louisiana.
Vice-President—A. D. Melvin, District of Columbia.
Vice-President—R. C. Moore, Missouri.
Vice-President—J. H. McNeil, Iowa.
Vice-President—R. A. Archibald, California.
Vice-President—C. A. Cary, Alabama.
Secretary—Richard P. Lyman, Connecticut.
Treasurer—George R. White, Tennessee.
Librarian—W. L. Williams, New York.

Executive Committee—William Herbert Lowe, New Jersey (chairman); M. H. Reynolds, Minnesota; Joseph Hughes, Illinois; W. Horace Hoskins, Pennsylvania; J. G. Rutherford, Dominion of Canada; E. B. Ackerman, New York, and the officers *ex-officio*.

VICE-PRES. A D. MELVIN.



VICE-PRES. R. C. MOORE.

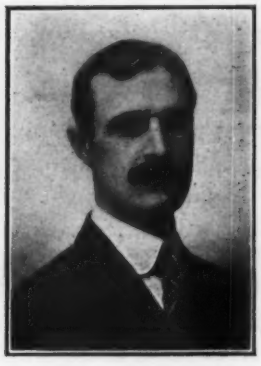
VICE-PRES. J. H. McNEIL

VICE-PRES. R. A. ARCHIBALD.

PRESIDENT W. H. DALRYMPLE.

VICE-PRES. C. A. CARY.

TREASURER G. R. WHITE.



SECRETARY R. P. LYMAN.

LIBRARIAN W. L. WILLIAMS.

Intelligence and Education—Leonard Pearson, Pennsylvania (chairman); D. Arthur Hughes, Illinois; M. Francis, Texas; J. H. McNeil, Iowa; S. Brenton, Michigan.

Diseases—Veranus A. Moore, New York (chairman); C. H. Higgins, Canada; J. R. Mohler, District of Columbia; H. J. Milks, Louisiana; O. E. Dyson, Illinois.

Finance—Thomas Bland, Connecticut (chairman); C. D. McGilvray, Canada; Chas. A. McKim, Nebraska.

Association of Faculties—Geo. W. Dunphy, Michigan (chairman); G. H. Berns, New York; E. H. Shepard, Ohio.

Legislation—J. P. Turner, District of Columbia (chairman); T. Earle Budd, New Jersey; C. E. Cotton, Minnesota; A. S. Cooley, Ohio; C. S. Lamb, Colorado.

Publication—C. J. Marshall, Pennsylvania (chairman); J. W. Connaway, Missouri; Tait Butler, North Carolina; T. E. Smith, New Jersey; R. P. Lyman, Connecticut.

Necrology—A. H. Baker, Illinois (chairman); William Dougherty, Maryland; C. C. Lyford, Minnesota; Thomas Thacker, Canada; J. F. Winchester, Massachusetts.

Resolutions—Sesco Stewart, Missouri (chairman); A. T. Peters, Nebraska; J. L. Robertson, New York; E. L. Quitman, Illinois; M. E. Knowles, Montana.

Local Committee of Arrangements—W. Horace Hoskins (chairman), John W. Adams, Carl W. Gay, C. T. Goentner, S. J. J. Harger, C. J. Marshall, J. C. McNeil, Otto Noack, Leonard Pearson, E. C. Porter, E. W. Powell, T. B. Raynor, W. L. Rhoads, W. H. Ridge, T. H. Schneider.

PRELIMINARY MEETINGS.

Monday, September 7.—11 A. M., Executive Committee; 4 P. M., Association of College Faculties and Examining Boards; 8 P. M., Committees.

PROGRAM.

First Day, Tuesday, September 8, 1908.

8.00 A. M. Meeting of the Executive Committee.

10.00 A. M. Convention opened.

Addresses of Welcome—Hon. John E. Reyburn, Mayor of Philadelphia; Dr. Edgar F. Smith, Vice-Provost, for the University of Pennsylvania.

Response to Addresses of Welcome—Dr. Harry D. Gill, New York City.

President Dalrymple's Address.
Roll Call.
Submission of the minutes of the previous meeting as presented in the annual report and in the records kept by Secretary Lyman.
Welcome to delegates from other veterinary associations—Dr. W. H. Hoskins.
Unfinished business.

12.00 M. Adjournment.

2.00 P. M. Association reassembles.
Report of Executive Committee.
Admission of new members.
Reports of regular committees:
- Intelligence and Education.
- Diseases.
- Legislation.
- Finance.
- Publication.
- Local Arrangements.
- Necrology.
- Resolutions.

Report of Special Committees:
- Association Seal.
- Revision of Article VI., Sec. 2 of By-laws.

Report of Secretary.
Report of Treasurer.
Report of Resident Secretaries.
Discussion of Reports.
Election of Officers.

5.00 P. M. Adjournment.

8.00 P. M. Reception to all members and visitors at Hotel Walton.

Second Day, Wednesday, September 9, 1908.

8.00 A. M. Executive Committee meeting.

10.00 P. M. Association assembles.
Reports of Committees.

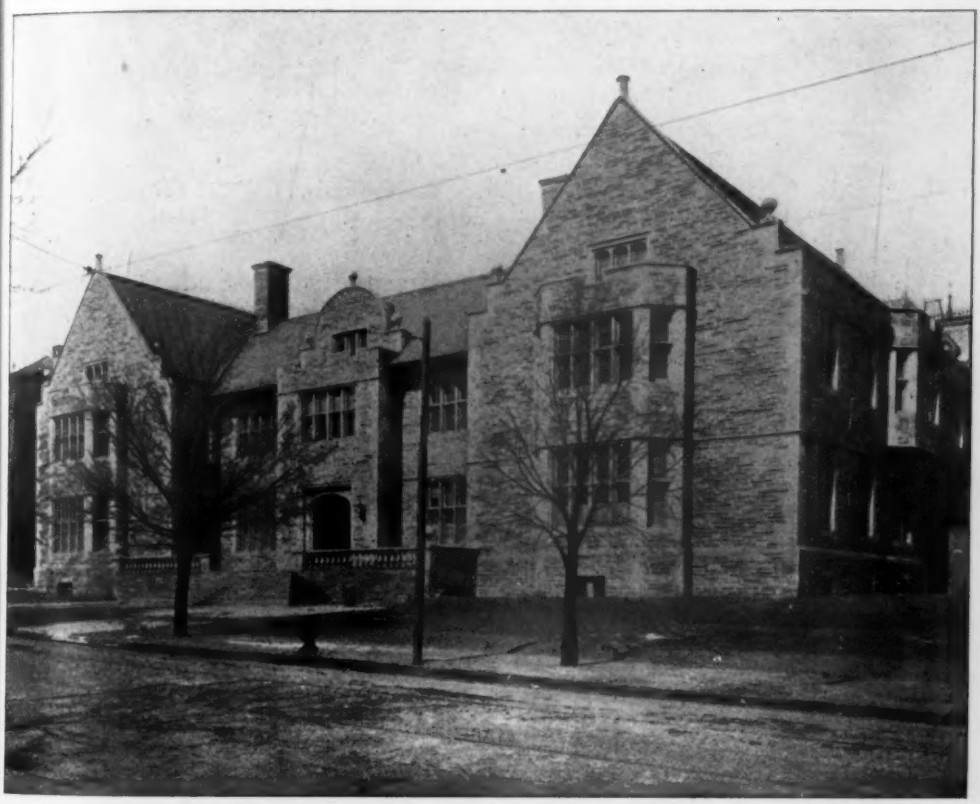
PAPERS AND DISCUSSIONS.

1. "The Important Relation of the Veterinarian to the Public Health"—Frederick J. Mayer, M.D., Special Medical Inspector, Louisiana State Board of Health, New Orleans, La.

2. "The Transportation of Live Stock"—N. S. Mayo, Santiaga de las Vegas, Cuba.

3. "Shipping Fever of Horses"—Charles H. Jewell, Artillery Corps, Fort Riley, Kan.

4. "Glanders in the Metropolitan District"—Harry D. Gill, New York City.



HOUSTON HALL, UNIVERSITY OF PENNSYLVANIA,
Where the Sessions of the A. V. M. A. will be held.

5. "A Clinical Examination of the Blood of Glandered Horses"—S. H. Burnett and C. D. Pearce, Ithaca, N. Y.

6. "The Eradication of Cattle Ticks in the South"—W. P. Ellenberger, Nashville, Tenn. Discussion to be opened on this paper by Tait Butler.

7. "The Work of the Bureau of Animal Industry in the Control and Eradication of Cattle and Sheep Scabies in the Western States"—Robert A. Ramsay, Department of Agriculture, Washington, D. C.

8. "Experiment on the Prevention of Hog Cholera"—J. W. Connaway, Columbia, Mo.

9. "The Control of Hog Cholera by Serum Immunization"—A. D. Melvin, Chief, Bureau of Animal Industry, Washington, D. C.

10. "Opsonic Therapy"—Robert A. Archibald, Oakland, Cal.

11. "The Bier Treatment"—S. J. J. Harger, Philadelphia, Pa.

12. "Notes on Rabies"—John V. Newton, Toledo, Ohio.

13. "Trypanosomes and Trypanosomiases" — Harry S. Smith, Albion, Mich.

14. "Pustular Eczema"—F. C. Greenside, New York, N. Y.

5.00 P. M. Adjournment.

8.00 P. M. Association reassembles.

Report of Committees.

15. "Milk and Milk Inspection"—C. Courtney McLean, Meadville, Pa.

16. "Hygiea Not the Child of Æsculapius"—Lloyd Champlain, Kansas City, Kan.

17. "Tuberculosis"—Burton R. Rogers, Manhattan, Kan.

18. "Surgery for the Relief of Stringhalt"—T. Bent Cotton, Mount Vernon, O.

10.00 P. M. Adjournment.

Third Day, Thursday, September 10, 1908.

PAPERS AND DISCUSSIONS (*Continued.*)

19. "Diphtheria of Men and Animals"—C. C. Lyford, Minneapolis, Minn.

20. "Diseases of the Mammary Gland in Cows"—Hans Jensen, Weeping Water, Neb.

21. "The Pathological Effects of Captivity in Wild Animals"—W. Reid Blair, New York City, N. Y.

22. "The Making of American Veterinary History"—D. Arthur Hughes, Chicago, Ill.

23. "Our Personal Responsibility to the Profession"—C. G. Lamb, Denver, Col.

24. "The Army Veterinarian and Others"—G. E. Griffin, Third Artillery, Representing Officially the United States Army.

25. "Pyaemic Arthritis"—Jno. Spencer, Blacksburg, Va.

26. "The Significance of Pathology to the Practitioner"—A. T. Kinsley, Kansas City, Mo.

Adjournment.

Fourth Day, Friday, September 11, 1908.

Clinic at the University of Pennsylvania, Veterinary Department, Thirty-ninth street and Woodland avenue. At 12 o'clock noon luncheon will be served. Clinic continues at 1.30 P. M.

The following well known operators will take part: Drs. W. L. Williams, Geo. H. Berns, A. H. Baker, Geo. R. White, L. A. Merillat, S. J. J. Harger, John W. Adams, H. D. Gill, C. E. Cotton, F. F. Hoffman and others.

SOCIAL FEATURES.

The Local Committee of Arrangements has endeavored to arrange an entertainment for the social enjoyment of visitors and friends as well as for recreation for the members. The following has been outlined to occupy the days of convention week:

Tuesday.—Visitors and friends are cordially invited to attend the opening session of the convention at 10.00 A. M., after which they will be escorted through the university buildings and grounds. At 1.00 P. M. luncheon will be served for members and visitors in Houston Hall. 8.00 P. M., a reception will be tendered at the Hotel Walton to which all the members, visiting veterinarians, delegates and their friends are cordially invited.

Wednesday.—Ladies will be shown many of the historic points of interest associated with the early history of our country which have made Philadelphia the mecca of every lover of independence. 8.00 P. M.—There will be a trip to Woodside Park, thus giving all an opportunity to visit Philadelphia's summer attractions.

Thursday.—Ladies will be escorted to places of interest, including Masonic Temple, Fairmount Park, City Hall and through the shopping centre of the city. Theatre party in the afternoon and annual banquet at 8 o'clock in the evening.

Friday.—Luncheon will be served at the University of Pennsylvania, Veterinary Department, Thirty-ninth street and Wood-

land avenue, at 12 o'clock noon to those in attendance at the clinic. The ladies are invited to the luncheon.

Saturday.—Atlantic City offers every form of entertainment and an over Sunday outing.

PROPOSED AMENDMENTS TO BY-LAWS.

There are offered five amendments to the by-laws which will come up for consideration:

To amend Article I., by adding a new section to be known as section 4, and to read: "He shall annually appoint a Corresponding Secretary, whose duty it shall be to make and maintain a list of veterinarians of America eligible to membership in this Association, and to endeavor to secure applications for membership in this body therefrom."—Signed, Executive Committee.

To amend Article I., by changing the numerical order of sections 4, 5 and 6 to read: "Sections 5, 6 and 7."—Signed, Executive Committee.

To amend Article V., section 9 to read: "Each Resident Secretary shall annually submit to the Committee on Intelligence and Education a report concerning recent veterinary facts and prevalent diseases within his jurisdiction, and shall aid the President and Secretary by the performance of such other duties as they may direct."—Signed, Executive Committee.

To amend Article VI., section 1, by striking out the words: "Said application must be in the hands of the Secretary at least thirty (30) days before the third Thursday of August."—Signed, R. P. Lyman and G. R. White.

To amend Article VI., section 9 to read: "Members who have been in active membership for twenty-five consecutive years and continuously thereafter until death or honorable withdrawal from the Association, shall be eligible to an honor roll of the Association, and shall be exempt from dues. It shall be the duty of the Secretary to report the names of members who are eligible to this list at each annual meeting of the Association. The list shall be referred to the Executive Committee for consideration and recommendation."—Signed, M. H. Reynolds.

TRANSPORTATION NOTES.

The Eastern Canadian, the New England, Central and the Trunk Lines Passenger Associations have granted an excursion rate, certificate plan, which provides for one full first-class, limited or unlimited, fare going and three-fifths fare returning by

the same route. This consideration is based upon there being one hundred or more persons in attendance at Philadelphia holding certificates properly approved at the meeting and which show a going fare of 75c. or more.

This arrangement will include all Canadian territory east of Port Arthur, Ontario; the entire New England States; the States of New York, New Jersey, Delaware, Maryland, West Virginia, north of Charleston, Virginia north of Charlottesville, and Alexandria, Ohio, Michigan, Indiana, Illinois, including and east of Chicago; also the District of Columbia. The certificate plan will not be operative on tickets purchased in Pennsylvania from points east of and including Erie, Oil City and Pittsburg, but, on the other hand, a fare of two cents per mile in each direction on round-trip tickets will be sold good going September 3d to 9th and returning leaving Philadelphia not later than September 15th. This round-trip ticket to be issued for the occasion upon application to any local Pennsylvania ticket agent. These tickets will not require validating.

Parties living outside of the territory in which the certificate plan is operative, viz., west of Chicago, Peoria and St. Louis, should purchase summer tourist tickets from their starting place, on a basis of less than two cents per mile, to the nearest point within the territory of the operation of the certificate plan (which place you will learn through your local ticket agent), and there purchase a certificate ticket to Philadelphia.

From California, Nevada, Oregon, Washington and points in British Columbia a nine months' tourist fare approximating two cents per mile through ticket in either direction is available to points within the certificate plan, viz., to Chicago, St. Louis or Peoria. Parties from these western points may obtain proportionately higher rates direct to Philadelphia, New York or Washington, D. C.

The following directions are submitted for your guidance:

1. Tickets for full fare going journey may be secured within three days (exclusive of Sunday) prior to and during the first three days of the meeting. The announced opening date of the meeting is September 7th and the closing date is September 11th, consequently you can obtain your going ticket and certificate not earlier than September 3d nor later than September 9th. Be sure that, when purchasing your going ticket, you request a certificate. *Do not make the mistake of asking for a receipt.*

2. Certificate must be obtained from ticket agent at the time of buying the ticket and is not transferable; a transfer or mis-

use of a certificate will forfeit all privileges granted the purchaser.

3. Present yourself at the railroad station for ticket and certificate at least 30 minutes before the departure of train on which you will begin your journey.

4. *Certificates are not kept at all stations.* If you inquire at your home station, you can ascertain whether certificates and through tickets can be obtained to place of meeting. If not obtainable at your station, the agent will inform you at what station they can be obtained. You can in such case purchase a local ticket thence, and there purchase through ticket and secure certificate to place of meeting.

5. Immediately on your arrival at the meeting, present your certificate to Dr. Richard P. Lyman, Secretary.

6. It has been arranged that the Special Agent of the Trunk Line Association will be in attendance to validate certificates on September 9th and 10th. *A fee of 25c. will be charged for each certificate validated.* If you arrive at the meeting and leave for home again prior to the Special Agent's arrival, or, if you arrive at the meeting later than September 10th, after the Special Agent has left, you cannot have your certificate validated and consequently you will not get the benefit of the reduction on the home journey. *No refund of fare will be made on account of failure to have certificate validated.*

7. So as to prevent disappointment it must be understood that the reduction on the journey home is not guaranteed but is contingent on an attendance at the meeting of not less than 100 persons holding regularly issued certificates obtained from ticket agents at starting points, showing payment of full first-class fare of not less than 75 cents on the going journey.

8. If the necessary minimum of 100 certificates are presented to the Special Agent, and your certificate is duly validated, you will be entitled up to and including September 15th, to a continuous passage ticket to point at which certificate was issued, and by the route over which you made the going journey, at three-fifths of the first-class limited fare.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The semi-annual meeting of the above association was held at Newark, N. J., July 9-10, 1908, with Dr. J. B. Hopper in

the chair. The first day two sessions were held at Stetter's Assembly Hall, 842 Broad street, while the entire second day was devoted to the conduct of a clinic and the performance and demonstrations of surgical operations at Dr. Vander Roest's Veterinary Hospital, 10-12-14 Orchard street.

Members Present.

Axford, Baldwin, Berry, Bridge, Budd, Churchill, Dixon, Dustan, English, Finch, Forsyth, Glennon, Gray, Harker, Hendren, Holdenby, Hopper (A. G.), Hopper (J. B.), Horner, Hurley, Kaiser, King, Laddey, Lindsay, Little, Loblein, Lowe (J. Payne), Lowe (Wm. Herbert), Magill, Mathews (John P.), Mount, Mosedale (James), Mosedale (Robert E.), McDonough, McCoy, Ripley, Rowe, Jr., Runge, Smith (Thos. E.), Stage, Thompson, Turner, Tuttle, Vander Roest.

Other veterinarians and guests were present as follows: Augustus Berdan, D. V. S., Inspector B. A. I., Newark; Edgar D. Bachman, D. V. S., Newark; John H. Bakelaar, M. D. C., Passaic; H. W. Bellman, D. V. S., Newark; L. J. Belloff, D. V. S., New Brunswick; C. E. Clayton, D. V. S., New York City; J. W. Collins, M. D., Newark; E. T. Davison, D. V. M., Superintendent of the U. S. Animal Quarantine Station, Athenia; Geo. P. Ellice, D. V. S., Rutherford; Mr. J. G. Feaster, Jacobstown; Henry J. Glennon, M. D. C., Newark; F. C. Grenside, V. S., President of the Veterinary Medical Association of New York City; Winfield B. Hobson, V. M. D., Paterson; James D. Hopkins, V. S., D. V. S., Newark; John J. Pardue, V. M. D., Newark; Geo. W. Smith, D. V. S., Hoboken; Thos. G. Sherwood, M.R.C.V.S., Woodcliffe Lake; Harold E. Stearns, D. V. S., Arlington; J. J. Teufel & Bro., Philadelphia, Pa., and others.

Minutes of Regular and Special Meetings Approved.

The minutes of the twenty-fourth annual meeting, held at Trenton, January 9, 1908, were read and approved.

The minutes of a special meeting held at the State House, Trenton, March 23, 1908, relative to Senate No. 194, creating a Board of Animal Industry, and prescribing its powers and duties, were also read and approved.

New Members Proposed.

Edgar D. Bachman, D.V.S., Newark; vouchers, Drs. James McDonough and John B. Hopper.

John H. Bakelaar, M.D.C., Passaic; vouchers, Drs. J. Payne Lowe and Thos. B. Rogers.

John G. Feaster, Jacobstown; voucher, Dr. Geo. O. Forsyth.

The applications were duly referred to the executive committee in accordance with the requirements of the by-laws.

Report of Executive Committee.

Dr. J. Payne Lowe, chairman, for the executive committee, reported on the above applications as follows: Edgar D. Bachman and John H. Bakelaar favorably and recommended the election of both gentlemen. In the case of John G. Feaster the report of the committee was unfavorable since the applicant was not qualified to practice veterinary medicine under the laws of New Jersey.

New Members Elected.

Drs. Bachman and Bakelaar were duly elected to membership and introduced to the association by the president.

Report of Committee on Legislation.

The committee on legislation made a full report of its labors. It was impossible to pass Senate 194, creating a Board of Animal Industry, at the recent session of the legislature, but much had been accomplished towards the desired end and it would not be many years before New Jersey would be in line with a veterinary sanitary service which would compare favorably with that of any other state.

Among the new laws passed are the following: Chapter 56, authorizing the establishment of a live stock commission of the State of New Jersey for the purpose of promoting interest in the breeding of pure-bred domestic animals and the improvement of grade animals of the various breeds. The commission is given power to purchase and maintain stallions of the draft and coach type. Twenty thousand dollars is appropriated to the use of the commission for the current year and thereafter an annual appropriation of five thousand dollars.

Chapter 212 regulates the public service of stallions and jacks in New Jersey. Provision is made for the registration, examination and licensing of all stallions and jacks.

Chapter 97 appropriates the sum of $25,000 to the State Commission on Tuberculosis in Animals for defraying expenses and for the payment of slaughtered animals.

The game laws of the state are amended in several important particulars, and additional legislation was enacted for the prevention of cruelty to animals.

The health and pure food laws are amended. The State Board of Health, as heretofore constituted, was legislated out of existence (chapter 298) and an act passed (chapter 299) creating a new State Board of Health. The governor has appointed new men on the board and it is being reorganized. It is earnestly hoped that this important branch of the state government will now be administered in a more efficient and comprehensive manner.

Secretary's Report and Communications.

The secretary read a letter from Professor Leonard Pearson, Dean of the Veterinary Department, University of Pennsylvania, expressing regret at his inability to be present. He also read a letter from Dr. Geo. W. Pope, tendering his resignation as a member of the association. His reason for resigning was the continued ill-health of his daughter which made a change of climate necessary for her well-being. Dr. Pope has been assigned to duty at San Diego, California.

The secretary reported that the A. V. M. A. has extended an invitation to the V. M. A. of N. J. to be represented by one or more delegates at the annual meeting of the national organization at the forthcoming annual meeting at Philadelphia from September 8 to 12. President Dalrymple felt that such action on the part of our association might be the means of placing our membership in closer touch with the A. V. M. A., and while it was not his purpose to dictate the character of the representation it was suggested that veterinarians who at this time are not members of the A. V. M. A. be selected; that the A. V. M. A. would be pleased to grant the privilege of the floor, in debate, to delegates.

The secretary also reported that in accordance with a resolution adopted at the last meeting twenty-one members had been dropped from the rolls of the association for non-payment of dues.

In connection with the death of Dr. Roscoe R. Bell, which occurred February 8th last, the secretary reported that an appropriate floral piece had been sent to his funeral, by order of President Hopper, as a token of regard for our departed brother. He read a letter from Mrs. Bell, asking that her grateful acknowledg-

ment be extended to the association for its expression of sympathy in her bereavement. The secretary suggested that a committee be appointed to draft suitable obituary resolutions.

The secretary also reported to death of Dr. A. T. Sellers, second vice-president of the association, who died at his home in Camden, N. J., April 3, 1908. Drs. Rogers, Mecray and Magill served as a committee to procure a floral tribute and to represent the association at the funeral. A committee should also be appointed to draft obituary resolutions.

Unfinished and New Business.

Arthur W. Smith Reinstated.—Dr. Arthur W. Smith, East Orange, made a payment on account of his back dues and he was reinstated to membership by vote of the association.

Dr. Pope Elected an Honorary Member.—Dr. Pope's resignation was accepted with regret. He was then elected an honorary member.

Ex-President Loblein Presented With a Gold Watch.—President Hopper recognized Dr. Smith, who proceeded to make some remarks that, to say the least, greatly surprised Ex-President Loblein, and he presented him with a handsome gold timepiece, the gift of his fellow-members of the association. In responding, Dr. Loblein said it was one of the proudest moments of his life and gave expression of his love for the profession and his high esteem for the members of the V. M. A. of N. J.

Committees and Delegates Named.—The President appointed committees as follows:

Animal Industry—Dr. Whitfield Gray, chairman, to succeed Dr. Geo. W. Pope, resigned.

Committee to assist the Pennsylvania Committee in entertaining the A. V. M. A. at Philadelphia—Dr. L. D. Horner, chairman; Magill, Loblein, Hendren and Smith (T. E.).

Delegates to the A. V. M. A. meeting at Philadelphia—Drs. Runge, Rogers (Thos. B.), Harker, Hurley and Harrison.

Delegates to the International Congress on Tuberculosis at Washington, D. C.—Drs. Lowe (Wm. Herbert), Runge, Tuttle, Budd, Gray, Rogers (Thos. B.), Rowe, Jr.

Committee on Bell Resolutions—Lowe (Wm. Herbert), Smith (Thos. E.), Runge.

Committee on Sellers' Resolutions—Rogers (Thos. B.), Glennon and McDonough.

Obituary Resolutions—Roscoe R. Bell.

Whereas, in the death of a man of the ability and sagacity of Roscoe R. Bell, practitioner, educator, and editor, which occurred February 8, 1898, the profession at large suffers an irreparable loss; and

Whereas, Dr. Bell was a frequent visitor at our semi-annual gatherings; and

Whereas, the ties of friendship were of such a character that we shall always cherish his memory; therefore, be it

Resolved, That we record our sense of loss and give expression of our sympathy to his family in their bereavement; and be it further

Resolved, That a page be set apart in the minute book of the Veterinary Medical Association of New Jersey to his memory, and that a copy of these resolutions be sent to his family and to the AMERICAN VETERINARY REVIEW.

WM. HERBERT LOWE,
T. E. SMITH,
WERNER RUNGE,
Committee.

Next Place of Meeting.

Upon motion of Dr. Glennon, the association decided to hold its annual meeting at Trenton in January.

Reading and Discussion of Papers.

"Ideals for the Veterinarian."* Dr. T. Earle Budd presented this subject in his usual eloquent and fascinating manner.

"Observations on Anthrax and Symptomatic Anthrax"* is the title of an able and interesting paper read by Dr. Whitfield Gray.

Both papers provoked a lively and profitable discussion. Dr. F. C. Grenside, of New York, remarked that he was impressed with the number of orators we possessed among our members.

Meeting adjourned at 6 P. M.

Evening Session.

The association reconvened at 8 P. M., with President Hopper in the chair for the discussion of the subject of tuberculosis and the efficiency of the tuberculin test. The attempt of the *New York Herald* to stultify the work of the profession in the public mind was deplored, and upon motion of Dr. Budd a com-

* See Original Articles.

mittee of three was appointed to conduct a campaign of publicity on the side of the profession. The chair appointed as such committee Drs. Rogers, Budd and Hendren.

Upon motion of Dr. Rowe, the representatives of the association, who had been appointed as delegates to the International Congress on Tuberculosis at Washington, D. C., September 21 to October 12, were instructed to use their best endeavors to obtain from the Congress an endorsement on the efficiency of the tuberculin test.

The following resolutions were presented by Dr. Rogers and adopted by the association:

Resolved, That it is the sense of this association:

1st. That bovine and human tubercle are interchangeable; that their differences are morphological—differences of environment.

2d. That the tuberculin test is as nearly perfect as anything can be.

3d. That the disease is contagious at whatever stage the bacilli are given off from the host.

4th. That cases of recovery in bovine tubercle are so rare that they can be left out of account.

5th. That this association deprecates as absolutely unfair the attack now being made on present tuberculin testing and restriction arising therefrom now being made by portions of the press.

Dr. McDonough made a motion that the association endorse the methods of the Montclair Board of Health for safeguarding the milk supply of that municipality from bovine tuberculosis. Dr. Lowe (Wm. Herbert) moved as an amendment, seconded by Dr. Vander Roest, that the executive committee be requested to make an investigation of the methods of said board and report its findings to the association. Amendment carried.

Meeting adjourned at 11.30 P. M.

Operations and Clinic.

A clinic was held at Dr. Vander Roest's Veterinary Hospital, 10-12-14 Orchard street, July 10, commencing at 9 A. M. The following operations were performed and demonstrations made, together with others not enumerated:

Ovariotomy in bitch (without anæsthetic), Dr. Rogers; (with anæsthetic), Dr. Hopper.

Cunean Tenotomy (standing), Dr. McDonough; (subcutaneous operation), Dr. Loblein; (tendon raised and demonstration made), Dr. Grenside.

Median Neurectomy, Dr. Hopper.

Shoeing for Spavin, interfering, quarter crack and demonstration of adjustment of springs to horse's feet, Dr. McDonough.

Pus in the Frontal Sinuses, Drs. Rogers and Magill.

Poll Evil, Dr. Rogers.

Operation on Roarer, Dr. Clayton.

Spavin Operation, Dr. Loblein.

Excision tumor on head of chicken, Drs. Clayton and Rogers.

Etherization of canine patient for operation, Dr. Mount.

Cutting dogs' ears, demonstration of proper methods, Dr. Mount.

Method of handling cross and vicious dogs, Dr. Mount.

Canine Practice Cases, Dr. Baldwin.

Stringhalt, Dr. Grenside.

High Neurectomy, Dr. Rogers.

The local committee deserves great credit. The arrangements were admirable. There was a large number of cases of all kinds on hand, as well as an abundance of clinical material, plenty of diagnosticians and operators, and the whole program was carried out in a commendable manner. It was 6 P. M. when the last operation was completed. It seemed to be the consensus of opinion that this was the best meeting ever held by the association, which is claiming a good deal, for some excellent meetings have been held.

WM. HERBERT LOWE, *Secretary.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

The fourteenth annual meeting of the above association convened in Omaha, Nebraska, June 23d and 24th, 1908.

The meeting was called to order in the auditorium of the City Hall by President J. H. Jensen at 9 a. m.

The roll call was dispensed with, as those present registered at the door. The following is the list: W. H. Austin, J. S. Anderson, C. E. Baxter, M. V. Byers, F. F. Brown. B. J. Baker, J. A. Berg, E. E. Biart, B. F. Barber, D. M. Campbell, H. Crandall, J. A. DeCow, C. H. Dechert, R. Ebbitt, A. T. Everett, A. Eger, H. E. Foster, B. Fisher, P. W. Flickinger, G. W. Giese,

D. E. Gall, C. L. Gomel, J. I. Gibson, R. Gabler, T. W. Gidley, C. Goodwin, W. D. Hammond, C. C. Hall, E. H. Hyland, A. E. Hoffman, F. Jelen, A. T. Jones, J. P. Jorgenson, P. Jucknies, S. H. Johnston, B. F. Kaupp, A. T. Kinsley, S. H. Kingery, T. H. Knaak, A. J. Kyle, W. M. Lee, R. Lovell, W. J. Lacy, C. P. Liegerot, W. F. Lyon, I. W. McEachran, H. M. McConnell, E. J. Meixel, C. S. McKim, E. F. McGraw, E. J. Netherton, C. L. Norris, J. H. Oesterhaus, S. P. Ojers, E. K. Paine, J. G. Parslow, A. T. Peters, H. Pew, O. G. Ruffcorn, J. E. Strayer, V. Schaefer, F. S. Schoenleber, C. E. Simpson, H. C. Simpson, P. Simonson, D. C. Scott, E. F. Stewart, S. Stewart, G. P. Stratter, L. J. Trafton, H. B. Treeman, F. E. Treeman, A. J. Treeman, J. Vincent, A. L. Wood, C. L. Wilhite, D. G. Young, H. E. Zimmermann.

The minutes of the previous meeting were read and approved. The secretary then read a letter of acknowledgment from Mrs. Rebecca Bell of receiving resolutions of respect for the late Dr. Roscoe R. Bell, which were adopted at the semi-annual meeting.

A letter of regret of inability to attend from Dr. L. L. Lewis, of Stillwater, Okla., was also read. The secretary then announced that the following gentlemen who were on the program but could not attend had forwarded their papers: Dr. J. F. Tippett, Chicago, Ill.; Dr. B. Rogers, Manhattan, Kan.; Dr. J. M. McKenzie, Northfield, Minn. The resignation of C. W. Dunn was read and was accepted by the association. A communication was read from Dr. R. P. Lyman, secretary of the American Veterinary Medical Association, in which the request was made to send one or more delegates to the meeting of that association to be held at Philadelphia, September next.

A motion was made that one delegate be named from each state represented in the M. V. V. A. by the chair. Seconded and carried.

The president then appointed the following names on the Board of Censors in the place of absentees: Drs. H. Simpson, J. H. Gain and F. F. Brown.

The following applicants, duly vouched for and favorably passed upon by the Board of Censors and pronounced worthy and well qualified, were admitted to membership:

Iowa—Drs. A. L. Wood, Hampton; P. W. Flickinger, Greenfield; J. P. Jorgenson, Elk Horn; B. F. Barber, Fonda; C. D. Williams, Woodbine; S. H. Johnston, Carroll; F. J. Trafton, Jefferson.

Missouri—J. R. Seipel, St. Marys; J. Emonts, St. Charles; T. B. Jones, Kansas City; W. F. Holbrook, Higginsville; S. R. Ingram, Kansas City; C. L. Gomel, Craig; C. H. Dechert, Hamilton; D. C. Houser, Carthage; J. W. Riley, Wright City; L. L. Cress, Clinton.

Nebraska—E. J. Meixel, Aurora; B. J. Baker, Mitchell; C. M. Elliott, Humboldt; H. E. Foster, Falls City; E. H. Hyland, Columbus.

Kansas—D. M. Campbell, Hiawatha; F. J. Lauman, Wichita; D. W. Nolan, Wichita.

South Dakota—B. H. Sayre, Brookings.

Oklahoma—H. Fay, Pawhuska; C. R. Walter, Tulsa.

Moved by Dr. S. Stewart, seconded by Dr. J. S. Anderson, that the Board of Censors with the elective officers constitute an Executive Committee, whose duty it shall be to meet before the opening of the regular sessions to consider any business to be brought before the association, such Executive Committee to exist until a like committee is provided by the constitution.

A resolution was introduced by Dr. A. T. Peters, seconded by Dr. V. Schaefer, that a committee of three be appointed to define the duties of the Executive Committee.

Dr. Hal C. Simpson, chairman of the Board of Censors, then made a report of the findings of the Board of Censors. Twenty-eight applications favorably passed up. Treasurer's books found to be correct and $106.75 in the treasury.

The secretary's salary, as provided for by a resolution of June 13, 1904, was $25 and expenses, the latter amounting to about $18. This, he said, the censors regarded as too low and recommended that it be made $50 per annum and expenses. It was found that the membership consisted of about 275 members and that the mailing list consisted of between 600 and 700 names. Dr. S. H. Kingery moved that the report of the Board of Censors be accepted. Seconded and carried.

Moved by Dr. H. C. Simpson that the secretary's salary be made $50 and expenses. Seconded and carried.

The following officers were elected for the ensuing year:

President—Dr. J. I. Gibson, Des Moines, Iowa.

First Vice-President—Dr. D. M. Campbell, Hiawatha, Kan.

Second Vice-President—Dr. V. Schaefer, Tekamah, Nebr.

Secretary-Treasurer—Dr. B. F. Kaupp, Kansas City, Mo.

Board of Censors—Dr. A. L. Wood, Iowa; Dr. J. A. DeCow, Nebraska; Dr. C. H. Dechert, Missouri; Dr. J. V. LaCroix, Kansas; Dr. W. B. McAlester, Oklahoma.

A paper on the use of influenza anti-toxin was then presented by Dr. J. H. Ooesterhaus, Fort Riley, Kan. This paper was discussed by Drs. Brown, Anderson, Simpson, Biart, Gibson, Kaupp, Netherton and others.

Several reports of cases were made by Dr. S. H. Kingery, Creston, Iowa, and R. Lovell, York, Nebr.

Meeting adjourned at 12.30 p. m. for luncheon.

At 1.30 p. m. those in attendance gathered at the hospital of Dr. D. C. Scott, 2810 Mason street, for clinic. Dr. Scott, with the assistance of Drs. Everett, Hall and Young, had provided a large and well planned clinic and great credit is due the local committee for their efforts.

The following is a list of the cases:

Case No. 1—A bay mare, showing lameness in the fore limbs, was presented for diagnosis. Drs. Gain and Jensen were called, who, after cocaining, decided the lameness was without question one of foot lameness and recommended madian neurectomy, which was ably performed by Dr. S. H. Johnston, of Carroll, Iowa.

Case No. 2—A black mule, lame in left hind leg, was presented for diagnosis. Drs. Kingery and Schaefer were called upon. Diagnosis: Spavin. Treatment: Recommended a blistering.

Case No. 3—A gray gelding, showing a marked "stringhalt" condition in the right hind leg. Tenotomy of the peroneus tendon by Dr. S. H. Kingery.

Case No. 4—Oopherectomy in bitch, Dr. H. Jensen.

Case No. 5—A bay mare was presented with contraction of perforans and perforatus tendons in the left fore leg. Tenotomy by Dr. V. Schaefer.

Case No. 6—A gray gelding was next presented. After running a few blocks "roaring" was noted. Operation arytenoidectomy by Dr. J. S. Anderson, Seward, Nebr. This horse was given six drams chloral hydrate diluted 1:10 intravenous.

Case No. 7—A black mare was presented with a bursal enlargement on the fore part of the carpal region. Drs. Baxter and Brown were called upon to advise as to treatment.

Case No. 8—A bay mare with ringbone in the right fore leg was presented. Median neurectomy was advised and performed by Dr. D. C. Scott.

Case No. 9—Oopherectomy in mare performed by Dr. J. S. Anderson.

At 8 p. m. veterinarians attended the annual dinner which was given at the Calumet. The banquet was excellently served and all present felt it was well they were there. The following subjects were presented:

"The Relation of the Veterinarian to the Hore Breeding Industry," by Dr. J. H. Gain, Lincoln, Nebr.

"Chronic Catarrh in the Horse," by Dr. F. J. Trafton, Jefferson, Iowa.

"Opsonins," by Dr. A. T. Kinsley, Kansas City, Mo.

Wednesday, June 24th, 1908, meeting called to order by the president, Dr. H. Jensen. "The Increased Demand for Municipal Meat and Dairy Inspection in Kansas," was presented by Dr. F. S. Schoenleber, Manhattan, Kan.; Dr. H. C. Simpson, Denison, Iowa, presented the subject of "Azoturia." "The Dermacentor Reticulatus," by Dr. R. B. Hurd, Payette, Idaho;; "Restraint of Animals by Aid of Chloral Hydrate," by Dr. F. F. Brown, Kansas City, Mo.

At 12 o'clock the meeting adjourned for luncheon.

At 1 p. m. the meting was again called to order by the president.

The paper of Dr. J. F. Tippett, Chicago, Ill., on "Benefits of Inspection of Meats from the Packers' Standpoint" was read. "Intestinal Calculus," by Dr. H. J. McKenzie, was also presented.

"Tuberculosis in a Colt" was reported by Dr. C. C. Hall. After which many interesting cases met with in practice were reported.

Meeting adjourned.

B. F. KAUPP, *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

DELHI, N. Y., July 30, 1908.

Editors of the American Veterinary Review:

New York City, N. Y.

Gentlemen—I wish to announce that the nineteenth annual meeting of the New York State Veterinary Medical Society will be held at Utica September 2, 4, inclusive.

PROGRAM.

Paper on Sterility, Dr. W. L. Williams; discussed by (a) Dr. T. F. O'Dea, (b) Dr. Chas. Cowie, (c) Dr. Grange.

Paper on Lameness, or the Diagnosis of Lameness, Dr. G. H. Berns; discussed by (a) Dr. F. J. Baker, (b) Dr. J. E. Ryder, (c) Dr. E. J. Hanshew.

The Veterinarian as a Sanitarian, Dr. E. B. Ackerman; discussed by (a) Dr. G. T. Stone, (b) Dr. V. A. Moore, (c) Dr. W. R. Blair.

The External Conformation of the Horse, Dr. F. C. Grenside; discussed by (a) Dr. J. W. Corrigan, (b) Dr. J. E. Ryder, (c) Dr. Grange.

Paper on Horse Shoeing, Dr. C. H. Taylor; discussed by (a) Dr. F. J. Baker, (b) Dr. Wm. F. Doyle.

Saccharine Foods, Dr. C. D. Morris; discussed by (a) Dr. C. H. Berns, (b) Dr. C. E. Shaw, (c) Dr. W. G. Hollingworth.

The Secretion of Milk, Dr. P. A. Fish; discussed by (a) Dr. W. G. Hollingworth, (b) Dr. C. D. Morris, (c) Dr. R. C. Reed.

Paper on Dentistry, Dr. Gordon Darby; discussed by (a) Dr. W. L. Williams, (b) Dr. Chas. Clayton, (c) Dr. R. W. McCully.

Rabies in New York State, Dr. Wm. H. Kelly; to be discussed at one of the evening banquets.

Supper and banquet to be held the first evening.

Entire evening to be devoted to the subject of Glanders.

Paper on Glanders, Dr. H. G. Berns; discussed by (a) Dr. H. D. Gill, (b) Dr. E. B. Ackerman, (c) Dr. Wm. H. Kelly.

Dinner to be held the second evening, after which there will be a Symposium.

Entire evening to be devoted to the discussion of Tuberculosis.

Paper on Tuberculosis, Dr. V. A. Moore; discussed by (a) Dr. C. D. Morris, (b) Dr. Wm. H. Kelly, (c) Dr. H. D. Gill, (d) Dr. W. G. Hollingworth.

Paper on "A Case of Pseudoleukemia in a Dog," Dr. S. H. Burnett; discussed by (a) Dr. James Law, (b) Dr. V. A. Moore.

Paper on "A Peculiar Case of Paralysis in Cattle," Dr. W. J. Taylor; discussed by (a) Dr. E. B. Ackerman, (b) Dr. C. E. Shaw, (c) Dr. V. A. Moore.

Committees appointed—Legislative Committee: Drs. W. G. Hollingworth, R. W. Ellis, A. G. Tegg. Committee on By-Laws: Drs. C. D. Morris, W. L. Williams, G. H. Berns. Committee on Resolutions: Drs. James Law, E. B. Ackerman, W. Reid Blair. Committee on Medical Jurisprudence: Drs. C. D. Morris, V. A. Moore, F. C. Grenside. Committee on Arrangements: Drs. W. G. Hollingworth, E. B. Ingalls, L. G. Moore, J. M. Currie. Committee to Answer Questions for the Question Box: Drs. V. A. Moore, G. H. Berns, Wm. H. Kelly.

W. HAMILTON, *Secretary.*

LOUISIANA VETERINARY MEDICAL ASSOCIATION.

This association held its regular annual meeting at Baton Rouge, La., on the 4th ult. The meeting was called to order by President M. M. White, of Shreveport, in the Agricultural Building at the Louisiana State University at 11 a. m.

The executive committee, composed of Drs. White, Flower and Chaney, acted favorably upon the following applications: Dr. Frank Collins, of Monroe, Chicago Veterinary College; Dr. T. C. Paulson, of Baton Rouge, Chicago Veterinary College; Dr. H. F. Vulliamy, of Crowley, Ontario Veterinary College; Dr. Joseph L. Drexler, of Thibodaux, New York Veterinary College; Dr. J. Arthur Goodwin, of New Iberia, Kansas City Veterinary College.

The act passed by the present session of the General Assembly regulating the practice of veterinary surgery and medicine in Louisiana, was read and commented upon, the members of the association being greatly pleased with its provisions. Dr. H. J. Milks, of the State Experiment Stations, was elected an honorary member of the association due to his early permanent departure from the state.

The following are the officers named for the ensuing year: Dr. M. M. White, of Shreveport, president; Dr. Jos. L. Drexler, of Thibodaux, vice-president; Dr. E. P. Fowler, of Baton Rouge, secretary and treasurer.

Members were in attendance from New Orleans, Shreveport, Baton Rouge, Monroe, Crowley, New Iberia and Thibodaux.

The meeting was highly satisfactory in every particular, and it was the opinion of all present that a new era has opened for the profession and in the interest of stock owners and breeders in the state.

After the meeting the association was entertained at a dinner given by Dr. W. H. Dalrymple, veterinarian at the Louisiana State University.

E. P. FLOWER, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The eleventh semi-annual meeting of this association was held on Thursday, July 9, 1908, at Webber Brothers Veterinary Infirmary on Andrews street, Rochester, N. Y.

Members present: Doctors L. R. Webber, A. McConnell, O. B. French, J. H. Taylor, P. J. Johnson, A. Geo. Tegg, W. B. Switzer, G. C. Kesler, Edward Nodyne, Nelson N. Lefler, D. P. Webster, Warren E. Stocking, W. J. Payne, J. E. Smith, Carr Webber, William F. Woolston, John O. Moore, W. H. Mahony, Ludo L. Zimmer, F. E. Cleaver, together with the following visitors: Doctors G. R. Chase, A. J. Tuxill, R. Perkins and D. D. La Fevre.

The clinical work began at 11 o'clock and continued until 3, when the meeting adjourned to the Masonic Temple, where a business session was held, at which several members reported some very flagrant violations of law. The association, by vote, instructed the president and secretary to instruct an attorney to prosecute the offenders. There was a good discussion on the operations performed at the clinic, and several members gave some interesting case reports. Dr. E. H. Nodyne, of Fulton, N. Y., read a very interesting report of experiments with tuberculine and mallein on tuberculous subjects.

The next meeting of the association will be held the second week of January. Arrangements are being made for a fine program to be presented at this meeting.

J. H. TAYLOR, *Secretary.*

NEWS AND ITEMS.

You cannot afford to miss the Philadelphia meeting.

Over 800 veterinarians are now in the service of the Bureau of Animal Industry.

S. J. Walkley, M.D.V., Inspector B. A. I., is now stationed at Cudahy, Wisconsin.

Dr. H. D. Gill has been appointed veterinarian to the Police Department of the City of New York.

Dr. A. T. Ferguson, assistant to Dr. Robert W. Ellis during 1907, has located at Cleburne, Texas.

Dr. Olof Schwarzkopf's troop has finished its annual march and is now at Camp Leon Springs, Texas, for a month's manœuvres.

Dr. T. Earle Budd, who officiated last week as veterinarian at the Atlantic City Horse Show, has acted in that capacity at Atlantic City at seven consecutive annual events.

J. Elmer Ryder, Professor of Obstetrics and Clinical Medicine, New York-American Veterinary College, is a victim of a severe attack of rheumatism He has gone to Mount Clement, Michigan, for the benefit of the baths.

Dr. Geo. R. Conrad, of Sabetha, Kansas, with his family, were visitors in Kansas City and vicinity during the first week in July. The Doctor has been very prosperous in general practice and is now the possessor of two fine Kansas farms as the fruit of his labors.

Dr. Geo. H. Glover, of the Colorado State College, recently visited Eastern cities hoping he might engage qualified instructors in sufficient number to place the Veterinary Department of the Colorado Agricultural College in the highest governmental class of veterinary colleges.

Dr. H. E. THOMPSON, of Pueblo, Col., is making an extended visit in Kansas and Missouri during the summer months in hopes of bettering the health of Mrs. Thompson. This indeed seems strange to those who live in the East and are wont to go to Colorado Springs and other resorts in the mountain state to recover health.

GOVERNOR FORT has announced the appointment of Dr. T. Earle Budd as a member of the Live Stock Commission of the State of New Jersey. This commission was created by an act of the last legislature for the promotion of interest in the breeding of pure-bred domestic animals and the improvement of grade animals of the various breeds. The new law provides for the examination and licensing of stallions and jacks.

DR. ELLIS, of the REVIEW, was taken with a severe chill about ten days ago followed with a high fever. His wife, who had gone to their Asbury Park cottage, was summoned back to the city. His temperature ran up to 106 degrees Fahrenheit and his physician stayed by his bedside. We are relieved to be able to say, however, that the danger soon passed and that the doctor's restoration to his usual good health has been sufficient to enable him to make the trip to his cottage by the sea.

Dr. H. JENSEN, of Weeping Water, Nebraska, has accepted a position as instructor in the Kansas City Veterinary College. The Doctor is widely known throughout the Central West, and particularly in the State of Nebraska, where he has been lecturing to Farmers' Institutes for some time past. He has taken a very active part in veterinary association work, holding official positions in several of them. The K. C. V. C., which already commands the confidence of the profession in this country, acquires a new element of strength by adding Dr. Jensen to its Faculty.

President JAMES of the University of Illinois, who has been commissioned by Governor Deneen to make a study of recent educational developments in Britain and on the continent, will make careful inspection of the leading foreign veterinary schools with a view to gathering information of value in the establishment of the new college of veterinary medicine and research by the university trustees at the stock yards, Chicago. Liberal provision has been made for this new college by the stock yards interests, and the trustees of the university will exert every effort to plan the most comprehensive and modern institution of the kind in the world.—(*The Breeder's Gazette.*)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8,9,10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	Jan. 14, 1909....	Trenton.....	W. Herbert Lowe, Paterson.
Connecticut V. M. Ass'n.....	Aug. 4, 1908.....	New Haven ..	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Sept. 2, 3, 4, 1908.	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Dec. 16, 1908....	Reading	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n	.....	Portland	A. Joly, Waterville.
Central Canada V. Ass'n.....	.....	Ottawa	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	Feb. 2-3, 1909...	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1909.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	.....	Galesburg.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Aug. 4, 5 & 6, 1908	Centralia	Frank Hockman, Louisville.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	.....	Raleigh	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	January, 1909...	Columbus.....	Sidney D. Myers, Wilmington
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n	August, 1908....	St. Joseph....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	Jan. 14, 1909....	Rochester.....	J. H. Taylor, Henrietta.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison.
Minnesota State V. M. Ass'n.....	.....	Duluth.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	.....	Philadelphia..	F.H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....	.....	Denver	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	Omaha	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence ...	T. E. Robinson, Westerly.
North Dakota V. M. Ass'n.....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n.....	2d Wed. in Aug.	Alameda.....	C.M.Haring, U. C., Berkeley
Southern Auxiliary of California State V. M. Ass'n.....	Jan.Apl.Jy.Oct.	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	2d Tues. in Jy. '09	Sioux Falls...	J. A. Graham, Sioux Falls.
Nebraska V. M. Ass'n.....	Oct. 6-7, 1908 ...	Grand Island.	H. Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	Jan., 1909.....	Topeka.....	B. Rogers, Manhattan.
Ass'n Médécale Veterinare Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	Not decided ..	D. A. Piatt, Lexington.
Washington State Col. V. M. A ..	Monthly.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association...	An'l, Jan., '09...	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo .	St.P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n....	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	.....	Atlanta.....	C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	June, 1909.....	Philadelphia..	B.T.Woodward, Wash'n, D.C.
Virginia State V. M. Ass'n	.....	Norfolk.....	W. G. Chrisman, Charlo'sv'le.
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club....	Monthly.....	Jersey City ...	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514—9th St., N. W.....	F. M. Ashbaugh, Wash., D.C.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	J. Madsen, Chicago, Ill.
Arkansas Veterinary Society.....	.....	.....	B. H. Merchant, Little Rock.
York Co. (Pa.) V. M. A.....	Sept. 1, 1908....	York, Pa.....	E. S. Bausticker, York, Pa.
Philippine V. M. A.....	.....	.....	R. H. McMullen, Manila.
Montana State V. M. A.....	Oct., 1908	Helena.....	
Veterinary Ass'n of Alberta... ..	.....	.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago	J. M. Parks, Chicago.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm.T.Conway, St.Louis, Mo.

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